Author Index to Volume 29

References with (L) are to Letters to the Editor; (RR) to Research Reports; (E) to Errata

Abbott, Robert C. (see Russell, Allan M.)—1130(L)
Adams, C. Q. and C. M. Davis, Jr. Effect of hydrostatic pressure and temperature on the magnetic properties of a nickel-zinc ferrite—372
Aden, A. L. (see Faire, A. C.)—928
Ahlert, R. H. (see Rittner, E. S.)—61
Ahlert, R. H. (see Rittner, E. S.)—744(E)
Ahsmann, G. and H. J. Oskam. Impedance and recovery time of glow discharges in mixtures of rare gases—1768(L)
Albert, P. A. Effect of sample thickness on the field annealing of 6.5% Si-Fe—351
Allison, Herbert W. and George E. Moore. Diffusion of tungsten in nickel and reaction at interface with SrO—842
Allison, J. W. Gamma-radiation absorption coefficients of air in the energy range 0.01 to 100 mev—1175
Albert, P. A. (see Wiener, G.)—366
Amar, Henri. Size dependence of the wall characteristics in a two-domain iron particle—542
Amelinckx, S. and W. Dekeyser. Movement of dislocation loops in lithium fluoride—1000(L)
Amelinckx, S. The decoration of dislocations in alkali halide whiskers—1610(L)
Amster, Harvey. Heavy moderator approximations in neutron transport theory—623
Anderson, Franklin R. (see Tennery, Victor J.)—755
Anderson, O. L. Cooling time of strong glass fibers—9
Andrews, R. D. (see Rudd, J. F.)—1421
Anolick, E. S. and Joseph Singer. Some aspects of tempering 3¼% silicon steel as followed by time decay of permeability—412
Anthony, Robert L. (see Hewitt, Fred G.)—1411
Arjas, Sigurds and Sam Legvold. Comments on the Senftleben method for the determination of the heat conductivity, the specific heat, and the viscosity of gases—1001(L)
Arnott, R. J. (see Wold, A.)—387
Arrott, Anthony. Magnetometallurgy—applications and techniques—508
Arrott, A. (see Sato, H.)—515
Arrott, Anthony (see Watson, John H. L.)—306
Artman, J. O. (see Foner, S.)—443
Ashkin, Arthur. Dynamics of electron beams from magnetically shielded guns—1594
Ashkin, A. Parametric amplification of space charge waves—1646

Bachman, C. H. and P. A. Silberg. Thermionic ions from hydrogen-palladium—1266(L)
Bachman, C. H. (see Miller, R. J.)—1277
Bady, Isidore. Measurement of losses of magnetic materials at high inductions, at frequencies up to 100 megacycles—393
Bagley, E. B., I. M. Cabott, and D. C. West. Discontinuity in the flow curve of polyethylene—109(L)
Bagley, E. B. and D. C. West. Chain entanglement and non-Newtonian flow—1511(L)
Bailey, G. C. (see Salkovitz, E. I.)—1747
Balluffi, R. W. (see Fara, H.)—1133(L)
Baltzer, Philip K. and John G. White. Crystallographic and magnetic studies of the system $(NiFe_2O_4)_{1-x}+(NiMn_2O_4)_x$—445
Bankoff, S. G., A. J. Hajjar, and B. M. McGlothlin, Jr. On the nature and location of bubble nuclei in boiling from surfaces—1739
Banks, Ephraim (see Tauber, Arthur)—385
Bardeen, J. M. and B. S Chandrasekhar. Peltier heat at the interface between a metal and its melt—1372(L)
Bateson, S. Critical study of the optical and mechanical properties of glass fibers—13
Batterman, Boris W. Hillocks, pits, and etch rate in germanium crystals—233(E)
Bean, C. P. (see Jacobs, I. S.)—537
Bean, C. P. (see Pry, R. H.)—532
Beck, Paul A. (see Kohara, S.)—1125(L)
Becker, Herbert. Material fringe value sign reversal in paraplex and castolite—1771(L)
Becker, J. H. On the quality of gray tin crystals and their rate of growth—1110
Becker, J. J. Precipitation and magnetic annealing in a copper-cobalt alloy—317
Becker, J. J. (see Kouvel, J. S.)—518
Bedo, D. E. (see Tomboulian, D. H.)—804
Behringer, Robert E. Comments on a theory of double Bloch walls in thin films—1380(L)
Belknap, D. J. and L. R. Crump. Lateral-current control mechanism for cold-cathode gas discharges—737(L)
Belson, H. S. (see Harrison, S. E.)—337
Belson, H. S. (see Kriessman, C. J.)—452
Bendt, P. J. and R. E. Peterson. Neutron multiplication in small spheres of fissionable material—1271
Benedick, W. B. (see Kulterman, R. W.)—500
Bergman, R. H. and R. A. Shahbender. The effect of statically applied stresses on the velocity of propagation of ultrasonic waves
Berkowitz, A. E. and P. J. Flanders. Magnetic measurements on some precipitating systems—314
Berman, Abraham S. Laminar flow in an annulus with porous walls—71
Berry, H. W. Liberation of electrons by fast neutral helium atoms from a tungsten target—1219
Bertaut, E. F. and F. Forrat. Structure and ferrimagnetism of the ilmenite compound $MnNiO_3$—247
Bickford, L. R., Jr., J. M. Brownlow, and R. F. Penoyer. Effect of cation vacancies on the magnetic annealing of cobalt-substituted magnetite—441
Bills, D. G. and N. P. Carleton. Adsorption of activated gases—691
Biot, M. A. On the reflection of electromagnetic waves on a rough surface—998(L)
Birnbaum, Howard K. Structural effects of the diffusionless phase transformations in Au-Cd alloys—1773(L)
Bloom, S. and K. K. N. Chang. Parametric amplification using ϕ low-frequency pumping—594(L)
Bloxsom, D. E., Jr. Electrically driven shock tube—1128(L)
Bloxsom, D. E., Jr. Use of capacitor discharges to produce high-velocity pellets—1049
Bobeck, Andrew H. New concept in large-size memory arrays—the twistor—485
Boling, J. L. and W. W. Dolan. Blunting of tungsten needles by surface diffusion—556
Bonner, Francis T. (see Emslie, Alfred G.)—858
Boothby, O. L., D. H. Wenny, and E. E. Thomas. Recrystallization of MnBi induced by a magnetic field—353
Bowser, M. L. (see Gibson, F. C.)—628
Boyd, D. R. (see Sihvonen, Y. T.)—85
Boyd, D. R. (see Sihvonen, Y. T.)—1143
Boyd, Richard H. Shear rate dependence of the viscosity and elastic compliance of polymer melts—correspondence with a hydrodynamic theory of viscoelastic flow—953
Brady, L. E. (see Hamilton, J. F.)—800

Brady, L. E. (see Hamilton, J. F.)—994(L)
Braunstein, R. (see Jenny, D. A.)—596(L)
Breazeale, J. B., C. G. McIlwraith, and E. N. Dacus. Factors limiting a magnetic suspension system—414
Breidt, P., Jr., J. N. Hobstetter, and W. C. Ellis. Some effects of environment on fracture stress of germanium—226(L)
Bresler, A. D., G. H. Joshi, and N. Marcuvitz. Orthogonality properties for modes in passive and active uniform wave guides—794
Breslin, J. (see Kaiser, W.)—1292
Brissonneau, P. Analogy between directional ordering and the magnetic diffusion aftereffect—249
Britt, C. O. (see Straiton, A. W.)—776
Brockman, F. G. (see Du Pre, F. K.)—1127(L)
Brophy, James J. Magnetic fluctuations in molybdenum permalloy—483
Brophy, James J. Experiment showing the influence of surfaces on $1/f$ noise in germanium—1377(L)
Broudy, R. M. Galvanomagnetic coefficients for arbitrary geometry—853
Broudy, R. M. (see Venables, J. D.)—1025
Brown, J. R. Development of preferred orientations in silicon iron—359
Brown, Sanborn E. (see Hirshfield, Jay L.)—1749
Brown, William Fuller, Jr. Rigorous approach to the theory of ferromagnetic microstructure—470
Brown, William Fuller (see Johnson, Clark E.)—313
Brown, William Fuller, Jr. (see Johnson, Clark E., Jr.)—1699
Brownlow, J. M. Preferential volatilization of cations from ferrites during sintering—373
Brownlow, J. M. (see Bickford, L. R.)—441
Bruce, L. (see Newkirk, J. B.)—151
Bueche, F. Tensile strength of plastics: effects of flaws and chain relaxation—1231
Burger, R. M. (see Farnsworth, H. E.)—1150
Burkhardt, L. C., R. H. Lovberg, G. A. Sawyer, and T. F. Stratton. Stability studies with longitudinal magnetic field on a straight pinched discharge—964
Button, Kenneth J. Theory of nonreciprocal ferrite phase shifters in dielectric-loaded coaxial line—998(L)
Byrnes, W. S. and R. G. Crawford. Improved torque magnetometer—493

Cabott, I. M. (see Bagley, E. B.)—109(L)
Cacheris, J. C. (see Nemarich, J.)—474
Cade, R. and K. A. Small. Numerical calculation of certain small electrostatic effects—53
Calhoun, B. A., W. V. Smith, and J. Overmeyer. Ferrimagnetic resonance in gadolinum iron garnet—427
Callen, Herbert B. Ferromagnetic dynamical response—333
Campbell, R. Gordon. Initial wave phenomena in a weak spherical blast—55
Canty, B. F. and A. D. Franklin. Resolution of doublet lines in spectra by a fourier series technique—870(L)
Caplan, P. J. (see Theissing, H. H.)—1673
Carleton, N. P. (see Bills, D. G.)—691
Carlson, R. O. Gold on silicon surfaces—1001(L)
Carmichael, J. H. and E. A. Trendelenburg. Ion induced reemission of noble gases from a nickel surface—1570
Carr, W. J., Jr. Temperature dependence of ferromagnetic anisotropy—436
Caswell, Hollis L. Investigation of low-temperature internal friction—1210
Chalmers, Bruce (see Jackson, K. A.)—1178
Champion, K. S. W. (see Faire, A. C.)—928
Chang, K. K. N. (see Bloom, S.)—594(L)
Charles, J. R. Dynamic fatigue of glass—1657
Chandrasekhar, B. S. (see Bardeen, J. M.)—1372(L)
Charles, R. J. Static fatigue of glass. I—1549
Charles, R. J. Static fatigue of glass. II—1554
Chen, C. W. Temperature dependence of magnetic properties of silicon-iron—1337
Chikazumi, Sōshin. Magnetic anisotropy induced by magnetic annealing and by cold working of Ni_3Fe crystal—346
Chipman, D. R. and Arthur Paskin. Contribution of temperature diffuse scattering to wings on bragg peaks—1608(L)
Chodrow, M., H. J. Shaw, and D. K. Winslow. The rf current distribution in modulated magnetically focused electron beams—1525
Chu, Chiao-Min. Propagation of waves in helical wave guides—88
Chynoweth, A. G. Pryomagnetic effect; a method for determining curie points—563
Chynoweth A. G. and G. L. Pearson. Effect of dislocations on breakdown in silicon p-n junctions—1103
Claxton, W. E. Stress-strain equation for rubber in tension—1398
Clay, Wallace G. (see Partridge, William S.)—939
Cleland, J. W. and J. H. Crawford, Jr. Low-temperature irradiation on n-type germanium—149
Cleland, J. W. (see Curtis, O. L., Jr.)—1722
Clogston, A. M. Inhomogeneous broadening of magnetic resonance lines—334
Cocks, M. Wear debris in the contact between sliding metals—1609
Coffman, R. E. (see Lesk, I. A.)—1493
Cohen, Anna Foner. Low temperature thermal conductivity in neutron irradiated vitreous silica—591
Cohen, Anna Foner. Thermal conductivity of sodium fluoride crystal at low temperatures—870(L)
Coleman, Bernard D. Statistics and time dependence of mechanical breakdown in fibers—968
Coleman, Bernard D. and Donald W. Marquardt. Time dependence of mechanical breakdown in bundles of fibers. IV. Infinite ideal bundle under oscillating loads—1091
Cole, R. W. Effect of elastic bending on magnetic properties of oriented silicon iron—370
Coleman, R. V. and G. G. Scott. Magnetic domain patterns on iron whiskers—526
Coleman, R. V. Observations of dislocations in iron whiskers—1487
Collings, E. W. Noise and electron temperatures of some cold cathode argon discharges—1215
Cook, J. S., W. H. Louisell, and W. H. Yocom. Stability of an electron beam on a slalom orbit—583
Cook, M. A. and William S. McEwan. Cohesion in plasma—1612
Cook, Melvin A. and Robert T. Keyes. Generation of high-velocity projectiles—1651
Coppen, P. J. (see Iles, P. A.)—1514(L)
Corliss, L. M., N. Elliott, and J. M. Hastings. Antiferromagnetic structures of MnS_2, $MnSe_2$, and $MnTe_2$—391
Crain, C. M. Some observations of the effect of radiation on the reflective indices of certain gases—1605
Crandall, Walter, E. and George P. Millburn. Neutron production at high energies—697
Crawford, J. H., Jr. (see Cleland, J. W.)—149
Crawford, R. G. (see Byrnes, W. S.)—493
Crawford, J. H., Jr. (see Curtis, J. W.)—1722
Croft, W. J. (see Goodenough, J. B.)—382
Cronemeyer, Donald C. Photoconductive response of single crystal germanium layers prepared by the pyrolytic decomposition of GeI_2—1730
Crowe, W. J. Behavior of the Te modes in ferrite loaded rectangular wave guide in the region ferrimagnetic resonance—397

Cullity, B. D. and August Freda. Quantitative method for the determination of fiber texture—25
Cullity, B. D. and August Freda. Quantitative method for the determination of fiber texture—1134(E)
Curtis, O. L., Jr., J. W. Cleland, and J. H. Crawford, Jr. Radiation-induced recombination centers in germanium—1722

Dacus, E. N. (see Breazeale, J. B.)—414
Damask, A. C. Hardness of neutron-irradiated diamonds—1590
Damask, A. C. (see Dienes, G. J.)—1713
D'Asaro, L. A. Field emission from silicon—33
Dash, William C. Distorted layers in silicon produced by grinding and polishing—228(L)
Dash, William C. Evidence of dislocation jogs in deformed silicon—704
Dash, William C. Silicon crystals free of dislocations—736(L)
Davidson, R. A. (see Tucker, P. E.)—868(L)
Davis, C. M. (see Adams, C. Q.)—372
Davis, W. D. Silicon crystal counters—231(L)
Dayhoff, E. S. Damping and the dispersion relations in antiferromagnetic resonance—344
De Bitetto, D. J. (see Du Pre, F. K)—1127(L)
DeBlois, R. W. Domain wall motion in metals—459
DeBlois, R. W. and C. D. Graham, Jr. Domain observations on iron whiskers—528
DeBlois, R. W. and C. D. Graham, Jr. Domain observations on iron whiskers—931
Deeley, C. W., J. A. Sauer, and A. E. Woodward. Dynamic mechanical behavior of irradiated polyethylene—1415
deJong, J. J., J. M. G. Smeets, and H. B. Haanstra. Some results of an electron microscopical study of the metallographic structure of two alloys for permanent magnets (ticonal G and ticonal X)—297
Dekeyser, W. (see Amelinckx, S.)—1000(L)
deKlerk, John. (see Truell, Rohn)—225(L)
Derwin, C. C. Diffraction by a perfectly absorbing thin screen—921
Despujols, J. and B. E. Warren. X-ray study of cold work in molybdenum—195
Dickerman, Philip J. Determination of the equilibrium temperature of a plasma—598(L)
Dienes, G. J. and A. C. Damask. Radiation enhanced diffusion in solids—1713
Diesel, T. J. (see Perls, T. A.)—1297
Dieter, F. A. (see Theissing, H. H.)—1673
Dillon, J. A., Jr. and H. E. Farnsworth. Work function and sorption properties of silicon crystals—1195
Dillon, J. F., Jr. Optical properties of several ferrimagnetic garnets—539
Dillon, J. F., Jr. Observation of domains in the ferrimagnetic garnets by transmitted light—1286
Dobrov, W. I. (see Perls, T. A.)—1297
Dolan, W. W. (see Boling, J. L.)—556
Doleiden, F. H. (see Fuller, C. S.)—1264(L)
Dorn, J. E. (see Simmons, J.)—1308
Dorsi, D. (see Wernick, J. H.)—1013
Dousmanis, G. C. and R. C. Duncan, Jr. Calculations on the shape and extent of space charge regions in semiconductor surfaces—1627
Doviak, Richard J. (see Lombardini, Pietro P.)—395
Dragsdorf, R. D. and W. W. Webb. Detection of screw dislocations in α-Al_2O_3 whiskers—817
Driesner, Allen R. and Paul Wagner. Friction of graphite over the temperature interval 25°C to 2450°C—901
Drummond, William E. Explosive induced shock waves. Part II: Oblique shock waves—167
Duggal, V. P. and S. M. Puri. Fast neutron attenuation in graphite—674
Duncan, R. C., Jr. (see Dousmanis, G. C.)—1627
Dunn, C. G. (110) [001] component prior to secondary recrystallization in three percent silicon iron—1608
Dunway, R. E. and J. A. Philips. Neutron generation from straight pinches—1137
Du Pre, F. K., D. J. De Bitetto, and F. G. Brockman. Magnetic materials for use at high microwave frequencies (50–90 kMc/sec)—1127(L)
Dwight, K., N. Menyuk, and D. Smith. Further development of the vibrating-coil magnetometer—491

Ecker, G. and K. G. Müller. Theory of the retrograde motion—1606
Eisenbud, L. (see Snowdon, S. C.)—950
Elliott, Harold A. Stress rupture in glass—224(L)
Elliott, N. (see Corliss, L. M.)—391
Ellis, W. C., H. J. Williams, and R. C. Sherwood. Growth of MnBi crystals and evidence for subgrains from domain patterns—534
Ellis, W. C. (see Breidt, P., Jr.)—226(L)
Emslie, Alfred G., Francis T. Bonner, and Leslie G. Peck. Flow of a viscous liquid on a rotating disk—858
Epstein, D. J. and B. Frackiewicz. Some properties of quenched magnesium magnetism ferrites—376
Ergun, Sabri and Victor H. Tiensuu. Determination of x-ray absorption coefficients of inhomogeneous materials—946
Eriksen, W. T. Field modulation of liquid induced excess surface currents on germanium *p-n* junctions—730
Eros, S. and J. R. Reitz. Elastic constants by the ultrasonic pulse echo method—683
Eschenfelder, Andrew H. Ionic valences in manganese-iron spinels—378
Espinola, R. P. and P. C. Waterman. Ultrasonic interferometer for the measurement of the temperature dependence of elastic constants—719
Ewald, A. W. and O. N. Tufte. Gray tin single crystals—1007
Eyring, Henry. (see Hirai, Nishio)—810

Faire, A. C., O. T. Fundingsland, A. L. Aden, and K. S. W. Champion. Electron recombination coefficient measurements in nitrogen at low pressures—928
Falk, R. B. (see Lever, R. C.)—304
Faneuff, C. E., E. A. McLean, and V. E. Scherrer. Some aspects of surface boiling—80
Fara, H. and R. W. Balluffi. Analysis of diffusion in media undergoing deformation—1133(L)
Faraday, B. J. and D. J. G. Gregan. Modulus of rupture of *zxt* 45 ADP crystals—1099
Farnsworth, H. E., R. E. Schlier, T. H. George, and R. M. Burger. Application of the ion bombardment-cleaning method to titanium, germanium, silicon, and nickel as determined by low-energy electron diffraction—1150
Farrar, R. T. Spin-lattice relaxation time in yttrium iron garnet—425
Feder, R., A. S. Nowick, and D. B. Rosenblatt. Study of order in annealed and irradiated alpha brass by lattice parameter measurements—984
Ferguson, Eric T. Uniaxial magnetic anisotropy induced in Fe-Ni alloys by magnetic anneal—252
Fiedler, H. C. (110) [001] secondary recrystallization texture in three percent silicon-iron—361
Fiedler, H. C. (see Walter, J. L.)—363
Filmer, A. J., G. J. Hutton, and T. S. Hutchison. Internal friction in aluminum at low temperatures—146
Fitzgerald, Edwin R. Dynamic mechanical properties of polyvinyl stearate at audio-frequencies—1442

Fischer, F. and I. P. Valkó. New mechanism for the generation of flicker noise—1772(L)
Fisher, E. S. and H. J. McSkimin. Adiabatic elastic moduli of single crystal alpha-uranium—1473
Flanders, P. J. (see Berkowitz, A. E.)—314
Flinn, Edward A. Dispersion curves for longitudinal and flexural waves in solid circular cylinders—1261(L)
Folen, V. J. and G. T. Rado. Magnetocrystalline anisotropy of Mg-Fe ferrites: temperature dependence, ionic distribution effects, and the crystalline field model—438
Foner, S. and J. O. Artman. Magnetization processes in heat-treated single crystal cobalt ferrite—443
Fonger, W. H., J. J. Loferski, and P. Rappaport. Radiation induced noise in *p-n* junctions—588
Fontana, B. J. Thermometric study of the frozen products from the nitrogen microwave discharge—1668
Foster, K. (see Pavlovic, D.)—368
Forrat, F. (see Bertaut, E. F.)—247
Forrer, Max P. and Kiyo Tomiyasu. Determination of higher order propagating modes in wave-guide systems—1040
Fourie, J. T. Method for making successive replicas of the same spot—608
Fowler, Alan B. Contact potential measurements on graphite —1132(L)
Frackiewicz, B. (see Epstein, D. J.)—376
Frank, Robert C., Robert W. Lee, and Robert L. Williams. Ratio of the diffusion coefficients for the diffusion of hydrogen and deuterium in steel—898
Frank, Robert C., Don E. Swets, and David L. Fry. Mass spectrometer measurements of the diffusion coefficient of hydrogen in steel in the temperature range of 25°–90°C —892
Frank, Robert C. Some observations regarding the present status of measurements of the diffusion coefficients of hydrogen in iron and mild steel—1262(L)
Franklin, A. D. (see Canty, B. F.)—870(L)
Freda, August (see Cullity, B. D.)—25
Freda, August (see Cullity, B. D.)—1134(E)
Freeman, Michael W. (see Watson, John H. L.)—306
Frerichs, Rudolf. Excitation of short infrared pulses with high repetition rate by electron bombardment of cuprous oxide—711
Fried, Burton and John M. Richardson. Optimum rocket trajectories—874(E)
Fried, Burton, D. General formulation of powered flight trajectory optimization problems—1203
Frischmann, P. G. (see Walter, J. L.)—363
Fry, David L. (see Frank, Robert C.)—892
Fujita, Hiroshi. Higher approximation to relaxation spectra from dynamic measurements—943
Fullam, E. F. (see Luborsky, F. E.)—989
Fuller, C. S. and F. H. Doleiden. Interactions between oxygen and acceptor elements in silicon—1264(L)
Fundingsland, O. T. (see Faire, A. C.)—928
Fuschillo, N. (see Sauer, J. A.)—1385

Gajewski, Ryszard. Influence of wall losses on pulse propagation in wave guides—22
Galkina, O. S. (see Kondorsky, E.)—243
Gatos, H. C. (see Rosenberg, A. J.)—771
Gatos, H. C. (see Lavine, M. C.)—1131(L)
Gatos, Harry C. (see Harvey, Walter W.)—1267(L)
Geller, S. (see Gilleo, M. A.)—380
Germer, L. H. Physical processes in contact erosion—1067
Gianola, U. F. Nondestructive memory employing a domain oriented steel wire—849
Gianola, U. F. Switching in rectangular loop ferrites containing air gaps—1122(L)
Gibbs, P. (see Tucker, R. N.)—1374(L)
Gibbs, P. (see Tucker, R. N.)—1375(L)
Gibson, F. C., M. L. Bowser, C. R. Summers, F. H. Scott, and C. M. Mason. Use of an electro-optical method to determine detonation temperatures in high explosives—628
Giener, G., P. A. Albert, R. H. Trapp, and M. F. Littmann. Cube texture in body centered magnetic alloys—366
Gilleo, M. A. and S. Geller. Substitution for iron in ferrimagnetic yttrium-iron garnet—380
Gillette, P. R. and K. Oshima. Magnetization reversal by rotation—529
Gillette, P. R. and K. Oshima. Thin film magnetization reversal by coherent rotation—1465
Gilman, J. J., C. Knudsen, and W. P. Walsh. Cleavage cracks and dislocations in LiF crystals—601
Gilman, J. J. and W. G. Johnston. Creation of dislocations in LiF crystals at low stresses—110(L)
Gilman, J. J. and D. W. Stauff. Nucleation of dislocations accompanying electric breakdown in LiF crystals—120
Gilman, J. J., W. G. Johnston, and G. W. Sears. Dislocation etch pit formation in lithium fluoride—747
Gilman, J. J. and W. G. Johnston. Dislocations, point-defect clusters, and cavities in neutron irradiated LiF crystals—877
Ginsburgh, I. Abnormally high detonation pressures in a shock tube—1381(L)
Glass, Myron S. Appraisal of permanent magnet materials for magnetic focusing of electron beams—403
Glicksman, M. (see Weisberg, L. R.)—1514(L)
Gold, Louis. Constraint principle in ferromagnetic domain theory—544
Goodenough, John B. Suggestion concerning the role of wave-function symmetry in transition metals and their alloys—513
Goodenough, J. B., D. G. Wickham, and W. J. Croft. Some ferrimagnetic properties of the system $Li_xNi_{1-x}O$—382
Goodenough, J. B. (see Huber, E. E.)—294
Goodenough, J. B. (see Wold, A.)—387
Gorge, T. H. (see Farnsworth, H. E.)—1150
Graham, C. D., Jr. Method for measuring saturation magnetization in ring samples—68
Graham, C. D., Jr. Method for measuring saturation magnetization in ring samples—411
Graham, C. D., Jr. (see DeBlois, R. W.)—528
Graham, C. D., Jr. (see Kouvel, J. S.)—518
Graham, C. D., Jr. (see DeBlois, R. W.)—931
Graham, C. D., Jr. Surface energy of a 90° domain wall in iron—1451
Grant, F. A. Use of complex conductivity in the representation of dielectric phenomena—76
Gravel, C. L. (see Kurtz, A. D.)—1456
Green, Mino (see Seiwatz, Ruth)—1034
Greene, L. D. and D. C. Reynolds. Crystal growth mechanism in cadmium sulfide crystals—559
Greene, R. F. (see Muss, D. R.)—1534
Gregan, D. J. G. (see Faraday, B. J.)—1099
Grenoble, H. E. (see Walter, J. L.)—363
Grimes, D. M. Miniaturized resonant antenna using ferrites —401
Grimes, D. N. and Edgar F. Westrum, Jr. Effect of thermal history on the antiferromagnetic transition in zinc ferrite—384
Guentert, O. L. and B. E. Warren. X-ray study of faults in body-centered cubic metals—40
Guile, A. E. and P. E. Secker. Arc movement in a magnetic field—1662
Guman, William J. Further comments on ionizing shock waves in monatomic gases—109(L)

Guman, William J. Further comments on ionizing shock waves in monatomic gases—873(E)
Gyorgy, E. M. Rotational model of flux reversal in square loop soft ferromagnets—283
Gyorgy, E. M. Modified rotational model of flux reversal —1709

Haanstra, H. B. (see deJong, J. J.)—297
Hadlock, R. K. Diffraction patterns at the plane of a slit in a reflecting screen—918
Hajjar, A. J. (see Bankoff, S. G.)—1739
Halsted, R. E. Electrophotoluminescent amplification—1706
Hall, R. N. Electrical contacts to silicon carbide—914
Hallgren, D. S. (see Luborsky, F. E.)—989
Hamana, Isao (see Onogi, Shigharu)—1503
Hamilton, J. F., L. E. Brady, and F. A. Hamm. Etching studies on photographic grains—800
Hamm, F. A. (see Hamilton, J. F.)—800
Hamilton, J. F. and L. E. Brady. Twinning in tabular photographic grains—994(L)
Hammerling, P. (see Wentink, T., Jr.)—742(L)
Hamming, R. W. (see Hopkins, I. L.)—742(L)
Hannam, H. J. and A. van der Ziel. Noise in oxide cathode coatings—1702
Harman, T. C. Special techniques for measurement of thermoelectric properties—1373(L)
Harman, T. C. Multiple stage thermoelectric generation of power—1471
Harrick, N. J. Characteristics of junctions in germanium—764
Harrison, E. R. Investigation of the perveances and beam profiles of an aperture disk emission system—909
Harrison, S. E., H. S. Belson, and C. J. Kriessman. Origin of ferromagnetic resonance line broadening in manganese-rich manganese ferrites—337
Harrison, S. E. (see Kriessman, C. J.)—452
Hart, John. Production of millimeter waves by a spark generator—743
Harvey, Walter W. and Harry C. Gatos. Electrode potential of germanium in aqueous solutions and the effect of illumination—1267(L)
Hastings, J. M. (see Corliss, L. M.)—391
Hatsopoulos, George N. and Joseph Kaye. Measured thermal efficiencies of a diode configuration of a thermo electron engine—1124(L)
Haynes, M. K. Model for nonlinear flux reversals of square-loop polycrystalline magnetic cores—472
Heffner, H. and G. Wade. Minimum noise figure of a parametric amplifier—1262(L)
Heffner, H. and G. Wade. Gain, band width, and noise characteristics of the variable-parameter amplifier—1321
Heidenreich, Robert D. (see Miller, Robert C.)—957
Henry, Warren E. Magnetic movements and apparent molecular fields in some rare earth metals and compounds—524
Herrman, Gabriel. Optical theory of thermal velocity effects in cylindrical electron beams—127
Henschke, Erich B. Crystal growth on cathode sputtered copper films by pairs of double spiral mechanisms analogous to Frank-Read sources—1495
Heroux, L. Dielectric relaxation spectra of lithium borosilicate glasses—1639
Hewitt, Fred G. and Robert L. Anthony. Measurement of the isothermal volume dilation accompanying the unilateral extension of rubber—1411
Hibbard, W. R. (see Walter, J. L.)—363
Hill, J. E. and K. M. van Vliet. Generation recombination noise in intrinsic and near-intrinsic germanium crystals—177
Hirai, Nishio and Henry Eyring. Bulk viscosity of liquids —810
Hirai, Hidefumi (see Onogi, Shigharu)—1503
Hirshfield, Jay L. and Sanborn C. Brown. Microwave method for measuring the probability of elastic collision of electrons in a gas—1749
Hirth, J. P. and L. Vassamillet. Correlation of thermal etch pits with dislocations in silver—595(L)
Hobstetter, J. N. (see Breidt, P., Jr.)—226(L)
Hobstetter, J. N. (see Wernick, J. H.)—1013
Hobstetter, J. N. (see Pfann, W. G.)—1238
Hoch, Michael. Heat of formation of BaC_2—1588
Hoffman, R. W. (see Knorr, T. G.)—1512(L)
Hogan, C. L., R. L. Jepsen, and P. H. Vartanian. New type of ferromagnetic amplifier—422
Holland, Samuel S., Jr. Neutron penetration in infinite media; calculation by semi-asymptotic methods—827
Honig, Richard E. Sputtering of surfaces by positive ion beams of low energy—549
Hopkins, I. L. and R. W. Hamming. Note on paper on creep and relaxation—742(L)
Hopkins, R. L. Light diffracting striations in silicon—1378(L)
Hoshimoto, Hiroshi (see Mura, Toshio)—115
Hrubecky, Henry F. Experiments in liquid atomization by air streams—572
Huber, E. E., D. O. Smith, and J. B. Goodenough. Domain-wall structure in permalloy films—294
Humphrey, Floyd B. Transverse flux change in soft ferromagnetics—284
Husimi, K. and K. Kataoka. Ultrasonic measurement of polarization switching processes in barium-titanate single crystal—1247
Husimi, Kazuo. Ultra-low-velocity component of spontaneous polarization in $BaTiO_3$ single crystal—1379(L)
Hutchison, T. S. (see Filmer, A. J.)—146
Hutton, G. J. (see Filmer, A. J.)—146

Iles, P. A. and P. J. Coppen. On the delineation of *p-n* junctions in silicon—1514(L)
Indig, G. S. (see Pfann, W. G.)—1238
Itō, Kazuo (see Kōichi, Kanaya)—1046
Ivey, D. G. (see Stevens, J. R.)—1390

Jackson, K. A. and Bruce Chalmers. Freezing of liquids in porous media with special reference to frost heave in soils—1178
Jacobs, I. S. and C. P. Bean. Antiferromagnetic domain walls and the magnetization process in α-Fe_2O_3—537
Jahn, Robert G. and David Weimer. On the performance of thin film gauges in high-temperature shock tube flows —741(L)
Jain, V. K. (see Sodha, M. S.)
Jamieson, John C. and A. W. Lawson. High-temperature heat conductivity of some metal oxides—1313
Jenny, D. A. and R. Braunstein. Some properties of gallium-germanium mixtures—596(L)
Jepsen, R. L. (see Hogan, C. L.)—422
Johnson, Charles Y. Mass determination of ions detected by Bennett ion rf mass spectrometer—740(L)
Johnson, Charles Y. Mass determination of ions detected by Bennett ion rf mass spectrometer—1134(E)
Johnson, Clark E., Jr., and William Fuller Brown, Jr. Magnetic determination of shape distribution of single domain powders—313
Johnson, Clark E. and William Fuller Brown, Jr. Shape distribution of magnetic powders—1699
Johnston, W. G. (see Gilman, J. J.)—110(L)
Johnston, W. G. (see Gilman, J. J.)—747
Johnston, W. G. (see Gilman, J. J.)—877
Jones, R. M. (see Taylor, A.)—522

Jones, R. V., G. P. Rodrigue, and W. P. Wolf. Ferrimagnetic resonance in single crystals of rare earth garnet materials—434
Josephson, Vernal. Production of high-velocity shocks—30
Joshi, G. H. (see Bresler, A. D.)—794

Kaczr, Jan. On the theory of double Bloch walls in thin films—569
Kaiser, W. and J. Breslin. Factors determining the oxygen content of liquid silicon at its melting point—1292
Kammer, E. W. Changes in thermoelectric power of silver and gold with cold work at liquid nitrogen temperature—1122(L)
Kanaya, Kōichi, Hisazo Kawakatsu, Kazuo Itō, and Haruo Yotsumoto. Experiment on the electron phase microscope—1046
Kaplan, A. (see Tompkins, R. E.)—502
Kaprielian, Zohrab A. Anisotropic effects in geometrically isotropic lattices—1052
Karayianis, N. (see Morrison, C. A.)—339
Kataoka, K. (see Husimi, K.)—1247
Kaufman, M. M. and V. L. Newhouse. Operating range of a memory using two ferrite plate apertures per bit—487
Kawakatsu, Hisazo (see Kōichi, Kanaya)—1046
Kaye, Joseph (see Hatsopoulos, George N.)—1124(L)
Keck, P. H. (see Peterson, A. W.)—213
Kedesdy, H. (see Peterson, A. W.)—213
Kedesdy, Horst H. (see Tauber, Arthur)—385
Keller, Joseph B. Diffraction by an aperture—744(E)
Keyes, Robert T. (see Cook, Melvin A.)—1651
Keywell, F. Improved diffusion boundary junctions in silicon due to scratch-free polishing—871(L)
Kingsbury, E. P. Some aspects of the thermal desorption of a boundary lubricant—888
Kingston, R. H. and P. E. Tannenwald. Ferromagnetic resonance at uhf in thin films—232(L)
Kino, P. T. (see Kirstein, P. T.)—1758
Kirstein, P. T. and G. S. Kino. Solution to the equations of space-charge flow by the method of the separation of variables—1758
Kivel, B. (see Wentink, T., Jr.)—742(L)
Kluver, J. Wilhelm. Small signal power conservation theorem for irrotational electron beams—618
Knechtli, R. C. and W. Knauer. Electron cooling by heat exchange—1513(L)
Knauer, W. (see Knechtli, R. C.)—1513(L)
Knopoff, L. Surface motions of a thick plate—660
Knorr, T. G. and R. W. Hoffman. Variation in the temperature derivative of resistivity—1512(L)
Knudsen, C. (see Gilman, J. J.)—601
Kobayashi, Jinzo. Growing of ferroelectric $PbTiO_3$ crystals—866(L)
Koh, P. K. Orientation study of ultra-thin molybdenum permalloy tape—356
Koh, P. K. Orientation study of ultra-thin molybdenum permalloy tape—637
Kohara, S., M. N. Parthasarathi, and Paul A. Beck. Anisotropy of boundary mobility—1125(L)
Koller, L. R. and H. D. Coghill. Electron excitation of bilayer screens—1064
Kolm, Henry H. Recent advances in the design of high-field dc solenoid magnets—489
Kondo, S. (see Skolnick, L. P.)—198
Kondorsky, E., O. S. Galkina and L. A. Tchernikova. Nature of electrical resistivity of the ferromagnetic metals at low temperatures—243
Korkowski, Vincent J. (see Rossing, Thomas D.)—479
Kouvel, J. S., C. D. Graham, Jr., and J. J. Becker. Unusual magnetic behavior of disordered Ni_2Mn—518
Kriessman, C. J., S. E. Harrison, and H. S. Belson. Relationship between single crystal and effective polycrystalline anisotropy constants in ferrites—452
Kriessman, C. J. (see Harrison, S. E.)—337
Krimm, S. and C. Y. Liang. Infrared spectra of high polymers. VIII. Polyvinyl nitrate—1407
Kronenberg, K. J. and R. K. Tenzer. Relation between colloid pattern and permanent magnet precipitate during magnetization reversal in alnico V—299
Kronenberg, K. J. (see Tenzer, R. K.)—302
Kuebler, Wolf (see Pulvari, Charles F.)—1315
Kuebler, Wolf (see Pulvari, Charles F.)—1742
Kulterman, R. W., F. W. Neilson, and W. B. Benedick. Pulse generator based on high shock demagnetization of ferromagnetic material—500
Kurnick, S. W. (see Powell, John M.)—1129(L)
Kurtz, A. D. and C. L. Gravel. Diffusion of gallium in silicon—1456

Lampert, Murray A. Simplified theory of one-carrier currents with field-dependent mobilities—1082
Lang, A. R. Direct observation of individual dislocations by x-ray diffraction—597(L)
Laponsky, A. B. (see Whetten, N. R.)—1374(L)
Lavine, L. R. (see Skolnick, L. P.)—198
Lavine, M. C., A. J. Rosenberg, and H. C. Gatos. Influence of crystal orientation on the surface behavior of InSb—1131(L)
Lawless, Kenneth R. (see Miller, G. Tyler)—863(L)
LeCraw, R. C., E. G. Spencer, and C. S. Porter. Ferromagnetic resonance and nonlinear effects in yttrium iron garnet—326
LeCraw, R. C. (see Porter, C. S.)—495
LeCraw, R. C. (see Spencer, E. G.)—429
Lee, Robert W. (see Frank, Robert C.)—898
Lee, T. H. On the discussion of the T-F theory by Robson and von Engel—734(L)
Legvold, Sam (see Arjas, Sigurds)—1001(L)
Lesk, I. A. and R. E. Coffman. Germanium diffused minicrystals and their use in transistors—1493
Levengood, W. C. Effect of origin flaw characteristics on glass strength—820
Lever, R. C., E. J. Yamartino, and R. B. Falk. Physical and magnetic properties of elongated single-domain iron and iron-cobalt permanent magnets—304
Leverton, W. F. Floating crucible technique for growing uniformly doped crystals—1241
Levy, Paul W. (see Truell, Rohn)—225(L)
Levy, P. W. (see Mylonas, C.)—864(L)
Liang, C. Y. (see Krimm, S.)—1407
Lindemann, W. W. and R. K. Mueller. Grain boundary photodetector—1770(L)
Ling, F. F. On asperity distributions of metallic surfaces—1168
Little, R. P., H. M. Ruppel, and S. T. Smith. Beam noise in crossed electric and magnetic fields—1376(L)
Littmann, M. F. (see Wiener, G.)—366
Liu, V. C. On the drag of a sphere at extremely high speeds—194
Liu, V. C. Note on diffusive separation of gas mixtures in flow fields—1188
Loeb, Leonard B. Mechanism of cataphoretic segregation in inert gas glow discharges—1369
Loferski, J. J. Analysis of the effect of nuclear radiation on transistors—35
Loferski, J. J. (see Fonger, W. H.)—588
Löfgren, Lars. Analog multiplier based on the Hall effect—158
Louisell, W. H. (see Cock, J. S.)—583

Lombardini, Pietro P., Richard F. Schwartz, and Richard J. Doviak. Measurement of the properties of various ferrites used in magnetically tuned resonant circuits in the 2.5–45 mc/sec region—395
Lovberg, R. H. (see Burkhardt, L. C.)—964
Lovell, L. C. (see Wernick, J. H.)—1013
Lozier, W. W. (see Null, M. R.)—1605
Luborsky, F. E. Loss of exchange coupling in the surface layers of ferromagnetic particles—309
Luborsky, F. E., E. F. Fullam, and D. S. Hallgren. Relation between crystallite orientation and magnetic properties of elongated single-domain iron particles—989
Ludwig, J. T. Design of optimum inductors using magnetically hard ferrites in combination with magnetically soft materials—497
Lyons, W. James. Theoretical values of the dynamic stretch moduli of fiber-forming polymers—1429

McCall, David W. Corrections for nuclear magnetic resonance measurements—739(L)
McEwan, William S. (see Cook, M. A.)—1612
McFarland, B. L. Comparison between the linear and nonlinear steady-state behavior of a heated tube—1682
McGlothlin, B. M., Jr. (see Bankoff, S. G.)—1739
McIlwraith, C. G. (see Breazeale, J. B.)—414
McLachlan, Dan, Jr. Theoretical surface tension of Ti, Zr, and Hf—1134(L)
McLaughlin, W. A. (see O'Connor, J. R.)—222(L)
McLean, E. A. (see Faneuff, C. E.)—80
McSkimin, H. J. (see Fisher, E. S.)—1473

MacDonough, Francis X. Skullcap method for magnetizing bowl-shaped magnetron magnets—506
Mallory, Kenneth B. Measurement of shunt impedance of a cavity—790
Mandell, Elaine R. (see Slichter, W. P.)—1438
Marburger, R. E. and A. W. Schluchter. Thermally precipitated phases and their distribution in an aluminum-silicon-cadmium alloy—184
Marcuvitz, N. (see Bresler, A. D.)—794
Maringer, R. E. Etch pitting on single-crystal indium antimonide—1261(L)
Marquardt, Donald W. (see Coleman, Bernard D.)—1091
Marshall, J. F. (see Snowdon, S. C.)—950
Mason, C. M. (see Gibson, F. C.)—628
Mason, Peter. High-speed fracture in rubber—1146
Maurer, R. D. Nucleation and growth in a photosensitive glass—1
Mayer, J. E. (see Mazo, R. M.)—735(L)
Mayer, Ludwig. Electron mirror microscopy of patterns recorded on magnetic tape—657
Mayer, Ludwig. Curie-point writing on magnetic films—1003(L)
Mayer, Ludwig. Magnetic writing with an electron beam—1454
Mazo, R. M. and J. E. Mayer. Hydrodynamics of a reacting and relaxing fluid—735(L)
Medicus, G. Diffusion and elastic collision losses of the "fast electrons" in plasmas—903
Medina, M. A. (see Skomal, E. N.)—423
Meechan, C. J. and A. Sosin. Recovery of electrical resistivity of Cu, Au, and Ni following cold work at 4°K—738(L)
Meiklejohn, W. H. Exchange anisotropy in the iron-iron oxide system—454
Mendelsohn, L. I. Microuniformity of permanent magnets—407
Menyuk, N. (see Dwight, K.)—491
Mercereau, J. E. (see Solt, I. H., Jr.)—324
Milberg, M. E. Transparency factor for weakly absorbing samples in x-ray diffractometry—64
Milch, A. (see Rutledge, W. C.)—834
Millburn, George P. (see Crandall, Walter E.)—697
Miller, C. E. Method for growing single crystals of potassium niobate—233(L)
Miller, G. Tyler and Kenneth R. Lawless. Formation of growth spirals on cuprous oxide grown on copper single crystals—863(L)
Miller, Robert C. and Robert D. Heidenreich. Interaction of low-energy electrons with ferroelectric materials—957
Miller, R. J. and C. H. Bachman. Production of cadmium sulfide crystals by coevaporation in a vacuum—1277
Mitchell, E. N. Effects of heat treatment of thin ferromagnetic films at intermediate temperatures—286
Mizuno, Hiroyuki. Influence of doping on diffusion rate of impurities in cathode nickel—1265
Monforte, F. R. (see Schnettler, F. J.)—477
Moore, George E. (see Allison, Herbert W.)—842
Moran, P. R. Dislocation etch techniques for some alkali halide crystals—1768(L)
Morgan, Samuel P. General solution of the Luneberg lens problem—1358
Morrish, A. H. and L. A. K. Watt. Coercive force of iron oxide micropowders at low temperatures—1029
Morrison, C. A. and N. Karayianis. Ferromagnetic resonance in uniaxial polycrystalline materials—339
Mould, R. E. Crossbending tests of glass fibers and the limiting strength of glass—1263
Mowery, V. O. Theoretical surface conductivity changes and space charge in germanium and silicon—1753
Mueller, R. K. (see Lindemann, W. W.)—1770(L)
Muldawer, Leonard (see Schwartz, Milton)—1561
Muller, K. G. (see Ecker, G.)—1606
Mura, Toshio and Hiroshi Yoshimoto. Measurements of quenching stresses in a bearing ring by interference fringes—115
Murphy, E. L. Energy distribution half-widths for field emission electrons—758
Muss, D. R. and R. F. Greene. Reverse breakdown in In-Ge alloy junctions—1534
Mylonas, C., R. Truell, and P. W. Levy. Birefringence in neutron-irradiated boron glass—864(L)
Mylonas, C. and R. Truell. Radiation effects from (n,α) reactions in boron glass and energy of the reacting neutrons—1252

Navon, David. Measurement of ternary distribution coefficients in silicon—579
Neal, Richard B. Design of linear electron accelerators with beam loading—1019
Neilson, F. W. (see Kulterman, R. W.)—500
Nemarich, J. and J. C. Cacheris. Temperature dependence of microwave permeabilities for polycrystalline ferrite and garnet materials—474
Nettleton, R. E. Intrinsic bulk viscosity in monatomic and diatomic gases—204
Newhouse, V. L. (see Kaufman, M. M.)—487
Newkirk, J. B. and L. Bruce. Rapid x-ray determination of a complete pole figure—151
Newkirk, J. B. Subgrain structure in a Fe-Si crystal as seen by x-ray extinction contrast—995(L)
Newman, Sanford B. and Irvin Wolock. Fracture phenomena and molecular weight in polyethyl methacrylate—49
Nielsen, J. W. Growth of magnetic garnet crystals—390
Nishina, Y. and W. J. Spry. Measurement of the Hall mobility in n-type germanium at 9121 megacycles—230
Nobe, Ken and William F. Seyer. Effect of torsional stress on the electrode potential of copper—1632

Norton, Francis J. Nondiffusibility of oxygen through platinum—1122(L)
Nowak, W. B. and E. J. Rapperport. Shape changes of internal surfaces in extrusion—1382(L)
Nowick, A. S. (see Feder, R.)—984
Null, M. R. and W. W. Lozier. Measurement of reflectance and emissivity of graphite at arc temperature with a carbon arc image furnace—1605

O'Brien, B. J. and C. S. Wallace. Ettingshausen effect and thermomagnetic cooling—1010
O'Connor, J. R. and W. A. McLaughlin. Growth of silicon and germanium disks—222(L)
Olsen, K. M. (see Wenny, D. H.)—504
Olson, C. D. and A. V. Pohm. Flux reversal in thin films of 82% Ni, 18% Fe—274
Onogi, Shigharu, Isao Hamana, and Hidefumi Hirai. Viscoelastic properties of concentrated solutions of polyvinyl alcohol—1503
Orgen, J. R. (see Smith, J. F.)—1523
Oshima, K. (see Gillette, P. R.)—529
Oshima, K. (see Gillette, P. R.)—1465
Oskam, H. J. (see Ahsmann, G.)—1768(L)
Overmeyer, J. (see Calhoun, B. A.)—427

Parker, R. J. Understanding and predicting permanent magnet performance by electrical analog methods—409
Parthasarathi, M. N. (see Kohara, S.)—1125(L)
Partridge, W. S. (see Tucker, P. E.)—868(L)
Partridge, William S. and Wallace G. Clay. Studies of high-velocity impact in wax—939
Partridge, William S., Howard B. Vanfleet, and C. R. Whited. Crater formation in metallic targets—1332
Paskin, Arthur (see Chipman, D. R.)—1525
Patel, J. R. Arrangements of dislocations in plastically bent silicon crystals—170
Pauleve, J. Magnetic resonance of ferrites with a compensation temperature—259
Pauthenet, R. Spontaneous magnetization of some garnet ferrites and the aluminum substituted garnet ferrites—253
Pavlovic, D. and K. Foster. Low residual induction in high-aluminum iron alloys—368
Pearson, G. L. (see Chynoweth, A. G.)—1103
Peck, Leslie G. (see Emslie, Alfred G.)—858
Penoyer, R. F. (see Bickford, L. R.)—441
Perls, T. A., T. J. Diesel, and W. I. Dobrov. Primary pyroelectricity in barium titanate ceramics—1297
Peterson, A. W., H. Kedesdy, P. H. Keck, and E. Schwarz. Surface tension of titanium, zirconium, and hafnium—213
Peterson, R. W. Donor diffusion in oxide cathodes—1383(E)
Peterson, R. E. (see Bendt, P. J.)—1271
Pfann, W. G., J. N. Hobstetter, and G. S. Indig. Preventing conductivity fluctuations during growth of a semiconducting crystal—1238
Philips, J. A. (see Dunway, R. E.)—1137
Pitman, Douglas T. (see Waring, Worden)—1002(L)
Planet, W. (see Wentink, T., Jr.)—742(L)
Pohl, Herbert Ackland. Some effects of nonuniform fields on dielectrics—1182
Pohm, A. V. (see Olson, C. D.)—274
Poncelet, Eugene F. Note on stress rupture in glass—1382(L)
Porter, C. S. (see LeCraw, R. C.)—326
Porter, C. S. (see Spencer, E. G.)—429
Porter, C. S., E. G. Spencer, and R. C. LeCraw. Transparent ferromagnetic light modulator using yttrium iron garnet—495
Portis, A. M. and Dale Teaney. Microwave faraday rotation: design and analysis of a bimodal cavity—1692
Powell, John M. and S. W. Kurnick. Indium antimonide infrared filter—1129(L)
Pratt, G. W., Jr. Magnetic properties of dilute magnetic alloys and of the rare earth metals—520
Pry, R. H. and C. P. Bean. Calculation of the energy loss in magnetic sheet materials using a domain model—532
Pry, R. H. (see Walter, J. L.)—363
Pulvari, Charles F. and Wolf Kuebler. Phenomenological theory of polarization reversal in $BaTiO_3$ single crystals—1315
Pulvari, Charles F. and Wolf Kuebler. Polarization reversal in tri-glycine fluoberyllate and tri-glycine sulfate single crystals—1742
Puri, S. M. (see Duggal, V. P.)—674

Rado, G. T. (see Weertman, J. R.)—328
Rado, George T. Effect of electronic mean free path on spin-wave resonance in ferromagnetic metals—330
Rado, G. T. (see Folen, V. J.)—438
Raisbeck, G. A definition of passive linear networks in terms of time and energy—1004(E)
Rapperport, E. J. (see Nowak, W. B.)—1382(L)
Rappaport, P. (see Fonger, W. H.)—588
Rathenau, G. W. Time decrease of permeability in iron—239
Redington, R. W. Maximum performance of high-resistivity photoconductors—189
Remeika, J. P. (see Williams, H. J.)—1772(L)
Reynolds, D. C. (see Greene, L. D.)—559
Richardson, John M. Experimental evaluation of the oxygen microwave absorption as a possible atomic frequency standard—137
Richardson, John M. (see Fried, Burton)—874(E)
Rittner, E. S. and R. H. Ahlert. Thermionic emission from barium activated molybdenum—61
Rittner, E. S., W. C. Rutledge, and R. H. Ahlert. On the mechanism of operation of the barium aluminate impregnated cathode—744(E)
Rittner, E. S. (see Rutledge, W. C.)—834
Roberts, W. H. Performance of permanent magnets at elevated temperatures—405
Robinson, D. L. Revealing dislocation sites in aluminum by transmission electron microscopy—1635
Robinson, P. H. (see Rosenberg, A. J.)—771
Robson, A. E. (see von Engel, A.)—734(L)
Rodbell, D. S. Study of precipitate particles in Cu-Co employing ferromagnetic resonance—311
Rodrigue, G. P. (see Jones, R. V.)—434
Rodrigue, G. P. (see Wolf, W. P.)—105
Roschen, John and C. G. Thornton. Solid-state dissolution of germanium by indium in semiconductor devices—923
Rose, Walter. Volumes and surface areas of pendular rings—686
Rosenberg, A. J., P. H. Robinson, and H. C. Gatos. Thermal restoration of oxygenated germanium surfaces—771
Rosenberg, A. J. (see Lavine, M. C.)—1131(L)
Rosenblatt, D. B. (see Feder, R.)—984
Rosenfield, A. R. Examination of the validity of the critical resolved twinning stress hypothesis—227(L)
Rosenfield, A. R. Revised calculation of deformation twinning systems—1771(L)
Rosi, F. D. (see Steele, M. C.)—1517
Rossing, Thomas D. and Vincent J. Korkowski. Switching properties of permalloy cores of varying coercivity—479
Rossing, Thomas D. (see Sanders, Richard M.)—288

Rossing, Thomas D. and Sidney M. Rubens. Effect of a transverse field on switching rates of magnetic memory cores—1245
Rubens, Sidney M. (see Rossing, Thomas D.)—1245
Rudd, J. F. and R. D. Andrews. Birefringence changes during retraction of oriented polystyrene monofilaments. III. Correlation with internal stress changes—1421
Rundle, R. E. (see Smith, H. G.)—679
Ruppel, H. M. (see Little, R. P.)—1376(L)
Russell, Allan M. and Robert C. Abbott. Whisker growth from iodide titanium wire—1130(L)
Rutledge, W. C. (see Rittner, E. S.)—744(E)
Rutledge, W. C., A. Milch, and E. S. Rittner. Measurement of instantaneous absolute barium evaporation rates from dispenser cathodes—834

Sadhukhan, P. Graphical method for estimation of contrast in electron microscopy—1235
Sako, J. H. (see Tobin, J. M.)—1373(L)
Salkovitz, E. I., G. C. Bailey, and A. I. Schindler. Effect of neutron irradition on the curie temperature of a variety of ferrites—1747
Sanders, Richard M. and Thomas D. Rossing. Reversible rotation in magnetic films—288
Sanders, Richard M. Further observations on reversible rotation in magnetic films—1003(L)
Sato, Hiroshi. Magnetostriction and elastic properties of ferromagnetic substances at high magnetic fields—456
Sato, H. and A. Arrott. Transitions from ferromagnetism to antiferromagnetism in iron aluminum alloys—515
Sauer, J. A., R. A. Wall, N. Fuschillo, and A. E. Woodward. Segmental motion in polypropylene—1385
Sauer, J. A. (see Deeley, C. W.)—1415
Savitski, M. J. Effects of composition and processing variables on the magnetic properties of the 50% nickel-iron alloy—353
Sawada, M. and C. H. Shaw. Calculation of the transmission factor in x-ray scattering—1344
Sawatzky, Anton. Diffusion of indium in tin single crystals—1303
Sawyer, G. A. (see Burkhardt, L. C.)—964
Scherrer, V. E. (see Faneuff, C. E.)—80
Schindler, A. I. (see Salkovitz, E. I.)—1747
Schlier, R. E. Adsorption of oxygen and carbon monoxide on tungsten—1162
Schlier, R. E. (see Farnsworth, H. W.)—1150
Schlömann, E. and J. R. Zeender. Ferromagnetic resonance in polycrystalline nickel ferrite aluminate—341
Schluchter, A. W. (see Marburger, R. E.)—184
Schnettler, F. J. and F. R. Monforte. Effect of cobalt on the relaxation frequency of nickel-zinc ferrite—477
Schoeck, Gunther. Influence of irradiation on creep—112(L)
Schwarz, E. (see Peterson, A. W.)—213
Schwartz, Milton and Leonard Muldawer. Approximate elastic spectrum of β-AuZn from temperature diffuse scattering of x-rays—1561
Schwartz, Richard F. (see Lombardini, Pietro P.)—395
Scott, F. H. (see Gibson, F. C.)—628
Scott, G. G. (see Coleman, R. V.)—526
Sears, G. W. (see Gilman, J. J.)—747
Seavey, M. H., Jr. and P. E. Tannenwald. Ferromagnetic resonance in ultrathin films—292
Secker, P. E. (see Guile, A. E.)—1662
Seiwatz, Henry. Low-frequency rotational hysteresis losses in ferrites—994(L)
Seiwatz, Ruth and Mino Green. Space charge calculations for semiconductors—1034
Senise, José T. Note on positive-ion effects in pulsed electron beams—839
Seyer, William F. (see Nobe, Ken)—1632
Sherwood, R. C. (see Williams, H. J.)—1772(L)
Shahbender, R. A. (see Bergman, R. H.)—1736
Shattes, Walter J., and H. A. R. Wegener. Lifetime and nickel precipitation in silicon—866(L)
Shaw, C. H. (see Sawada, M.)—1344
Shaw, H. J. (see Chodrow, M.)—1525
Sherwood, R. C. (see Ellis, W. C.)—534
Sherwood, R. C. (see Williams, H. J.)—296
Shkarofski, I. P. Effect of variation of dc current in a modulated electron beam—222(L)
Sihvonen, Y. T. and D. R. Boyd. Radiation discrimination with photoconducting crystals—85
Sihvonen, Y. T. and D. R. Boyd. Ohmic probe contacts to CdS crystals—1143
Silberg, P. A. (see Bachman, C. H.)—1266
Silsbee, R. H. (see Stevens, D. K.)—66
Silvey, G. A. Zn_3As_2, a semiconducting intermetallic compound—226(L)
Singer, Joseph (see Anolick, E. S.)—412
Singh, Sampooran and A. Soundraraj. Twinning in explosively loaded steel—111(L)
Sirvetz, M. H. and J. E. Zneimer. Microwave properties of polycrystalline rare earth garnets—431
Simmons, J. and J. E. Dorn. Analyses for diffusion during plastic deformation—1308
Simnad, M. T., R. Smoluchowski, and Aija Spilners. Effect of proton irradiation upon hydrogen reduction of NiO—1630
Sinnott, K. M. Apparatus for the measurement of shear modulus and internal friction between 4.2 and 100°K—1433
Skolnick, L. P., S. Kondo, and L. R. Lavine. An improved x-ray method for determining cation distribution in ferrites—198
Skomal, E. N. and M. A. Medina. Microwave frequency conversion studies in magnetized ferrites—423
Slichter, W. P. and Elaine R. Mandell. Molecular motion in polypropylene, isotactic and atactic—1438
Slonczewski, J. C. Origin of magnetic anisotropy in $Co_xFe_{3-x}O_4$—448
Small, K. A. (see Cade, R.)—53
Smeets, J. M. G. (see deJong, J. J.)—297
Smith, D. (see Dwight, K.)—491
Smith, D. O. Static and dynamic behavior of thin permalloy films—264
Smith, D. O. and G. P. Weiss. Steady-state and pulse measurement techniques for thin magnetic films in the vhf-uhf range—290
Smith, D. O. (see Huber, E. E.)—294
Smith, H. G. and R. E. Rundle. X-ray investigation of perfection in tin whiskers—679
Smith, J. F. and J. R. Orgen. Electrical properties and thermal expansion of the laves phases, $CaMg_2$ and $MgCu_2$—1523
Smith, S. T. (see Little, R. P.)—1376(L)
Smith, W. V. (see Calhoun, B. A.)—427
Smoluchowski, R. (see Simnad, M. T.)—1630
Snowdon, S. C., L. Eisenbud, and J. F. Marshall. Analytical representation of angular distribution data—950
Soberman, Robert K. Effects of lateral boundaries on natural convection—872(L)
Sodha, M. S. and V. K. Jain. On physics of armor penetration—1769
Solt, I. H., Jr., R. L. White, and J. E. Mercereau. Multiplicities of the uniform precessional mode in ferrimagnetic resonance—324
Sommer, A. H. *N*-type and *p*-type conduction in alkali-antimonide photoemitters—1568
Sommer, A. J. Activation of silver-magnesium and copper-beryllium dynodes—598(L)

Soundraraj, A. (see Singh, Sampooran)—111(L)
Soutif-Guicherd, Jeanne. Paramagnetic Faraday effect—256
Spencer, E. G., R. D. LeCraw, and C. S. Porter. Ferromagnetic resonance in yttrium iron garnet at low frequencies—429
Spencer, E. G. (see LeCraw, R. C.)—326
Spencer, E. G. (see Porter, C. S.)—495
Spilners, Aija (see Simnad, M. T.)—1630
Spry, W. J. (see Nishina, Y.)—230(L)
Stadler, H. L. Electrical stability of $BaTiO_3$ single crystals at −195°C—743(L)
Stadler, H. L. Ferroelectric switching time of $BaTiO_3$ crystals at high voltages—1485
Stauff, D. W. (see Gilman, J. J.)—120
Stauffer, L. H. (see Tompkins, R. E.)—502
Stauss, H. E. Method for measuring magnetostriction corrected for initial domain distribution and its application to nickel and iron—182
Stauss, H. E. Magnetostriction of low-density cobalt rondel—1690
Steele, M. C. and F. D. Rosi. Thermal conductivity and thermoelectric power of germanium-silicon alloys—1517
Steele, S. Robert (see Waring, Worden)—1002(L)
Stevens, D. K., W. J. Sturm, and R. H. Silsbee. Magnetic susceptibility of neutron-irradiated quartz—66
Stevens, J. R. and D. G. Ivey. Mechanical behavior of a polymer at temperatures through the glass transition temperature—1390
Stitch, Malcolm. Maser amplifier characteristics for transmission and reflection cavities—782
Stitch, Malcolm L. Maser amplifier characteristics for transmission and reflection cavities—1383(E)
Straiton, A. W., C. W. Tolbert, and C. O. Britt. Apparent temperatures of some terrestrial materials and the sun at 4.3-millimeter wavelengths—776
Stratton, T. F. (see Burkhardt, L. C.)—964
Stuijts, A. L. and H. P. J. Wijn. Preparation and properties of crystal-oriented ferroxplana samples—468
Sturm, W. J. (see Stevens, D. K.)—66
Stüwe, H. P. Some observations on creep in zinc single crystals—566
Suchow, Lawrence. New method for making magnetic fields visible—223(L)
Suhl, H. Origin and use of instabilities in ferromagnetic resonance—416
Summers, C. R. (see Gibson, F. C.)—628
Swalin, R. A. Model for solute diffusion in crystals with the diamond structure—670
Swets, Don E. (see Frank, Robert C.)—892

Takada, Kazuo (see Wakeshima, Hiromu)—1126(L)
Tannenwald, P. E. (see Kingston, R. H.)—232(L)
Tannenwald, P. E. (see Seavey, M. H., Jr.)—292
Tartaglia, A. A. (see Trumbore, F. A.)—1511(L)
Tauber, Arthur, Ephraim Banks, and Horst H. Kedesdy. Magnetic germanates isostructural with garnet—385
Taylor, A. and R. M. Jones. Further magnetic and x-ray diffraction studies on iron-rich iron-aluminum alloys—522
Taylor, Theodore C. Crack-free alloyed junctions in silicon using pure aluminum—865(L)
Tchernikova, L. A. (see Kondorsky, E.)—243
Teaney, Dale (see Portis, A. M.)—1692
Tennery, Victor J. and Franklin R. Anderson. Examination of the surface and domain structure in ceramic barium titanate—755
Tenzer, R. K. and K. J. Kronenberg. Phase analysis of Alnico V based on temperature effects—302
Tenzer, R. K. (see Kronenberg, K. J.)—299
Theissing, H. H., F. A. Dieter, and P. J. Caplan. Analysis of the emissive phase of a pulsed maser—1673
Thornton, C. G. (see Roschen, John)—923
Thomas, E. E. (see Boothby, O. L.)—353
Thomas, John B. and Eugene Wong. Experimental study of dc corona at high temperatures and pressures—1226
Tien, P. K. Parametric amplification and frequency mixing in propagating circuits—1347
Tiensuu, Victor H. (see Ergun, Sabri)—946
Tiller, W. A. Production of dislocations during growth from the melt—611
Tobin, J. M. and J. H. Sako. Thermal neutron absorption cross section of xenon-124—1373(L)
Todd, B. Johnson. Gettering of oxygen by a nonoperating ion gauge—232(L)
Todd, B. Johnson. Gettering of oxygen by a nonoperating ion gauge—1134(E)
Tolbert, C. W. (see Straiton, A. W.)—776
Tomboulian, D. H. and D. E. Bedo. Spectral characteristics of the radiation emitted by electrons accelerated in a synchrotron—804
Tomiyasu, Kiyo (see Forrer, Max P.)—1040
Tompkins, J. E. Energy distribution in partially ferrite filled wave guides—399
Tompkins, R. E., L. H. Stauffer, and A. Kaplan. New magnetic core loss comparator—502
Trapp, R. H. (see Wiener, G.)—366
Trendelenburg, E. A. (see Carmichael, J. H.)—1570
Truell, Rohn, John deKlerk, and Paul W. Levy. Neutron irradiation effects in borosilicate glass and their detection by ultrasonic attenuation and velocity measurements—225(L)
Truell, R. (see Mylonas, C.)—864(L)
Truell, R. (see Mylonas, C.)—1252
Trumbore, F. A. and A. A. Tartaglia. Resistivities and hole mobilities in very heavily doped germanium—1511(L)
Tsuya, Noboru. Theory of magnetostriction and g factor in ferrites—447
Tucker, P. E., R. A. Davidson, and W. S. Partridge. Time delay between high-speed pellets and associated luminosity and ionization—868(L)
Tucker, R. N. and P. Gibbs. Imperfection dependence of the catalytic decomposition of H_2O_2 on Al_2O_3—1374(L)
Tucker, R. N. and P. Gibbs. Impurity penetration along dislocation lines in Al_2O_3—1375(L)
Tufte, O. N. (see Ewald, A. W.)—1007
Tweet, A. G. Evidence for vacancy clusters in dislocation-free Ge—1520

Valkó, I. P. (see Fischer, F.)—1772(L)
van der Ziel, A. (see Hannam, H. J.)—1702
Vanfleet, Howard B. (see Partridge, William S.)—1332
van Vliet, K. M. (see Hill, J. E.)—177
Vartanian, P. H. (see Hogan, C. L.)—422
Vassamillet, L. (see Hirth, J. P.)—595(L)
Venables, J. D. and R. M. Broudy. Dislocations and selective etch pits in InSb—1025
Vobnun, Friedrich O. Analysis of a multipole state separator and focuser for polarizable molecules—633
von Engel, A. and A. E. Robson. Mechanism of electron emission from the arc cathode—734(L)

Wade, G. (see Heffner, H.)—1261(L)
Wade, G. (see Heffner, H.)—1321
Wagner, Paul (see Driesner, Allen R.)—901
Wagner, Carl. Passivity during the oxidation of silicon at elevated temperatures—1295
Wagner, R. S. Production of dislocations in germanium by thermal shock—1679

Wakeshima, Hiromu and Kazuo Takada. On the limit of superheat—1126(L)
Walker, L. R. Resonant modes of ferromagnetic spheroids —318
Wall, R. A. (see Sauer, J. A.)—1385
Wallace, C. S. (see O'Brien, B. J.)—1010
Walsh, W. P. (see Gilman, J. J.)—601
Walter, J. L., W. R. Hibbard, H. C. Fiedler, H. E. Grenoble, R. H. Pry, and P. G. Frischmann. Magnetic properties of cube textured silicon-iron magnetic sheet—363
Waring, Worden, Douglas T. Pitman, and S. Robert Steele. Germanium arsenide as diffusion surface compound —1002(L)
Warren, Bert (see Geuntert, O. J.)—40
Warren, B. E. (see Despujols, J.)—195
Waterman, P. C. Orientation dependence of ultrasonic attenuation in zinc—1190
Waters, William E. Rippling of thin electron ribbons—100
Watson, John H. L., Anthony Arrott, and Michael W. Freeman. Effects of magnetic fields upon anisotropic iron crystals—306
Watt, L. A. K. (see Morrish, A. H.)—1029
Webb, W. W. (see Dragsdorf, R. D.)—817
Weertman, J. R. and G. T. Rado. Low-temperature spin-wave resonance at 3000 and 4000 mc/sec in a permalloy having nearly zero magnetocrystalline anisotropy—328
Weertman, J. Dislocation model of low-temperature creep —1685
Wegener, H. A. R. (see Shattes, Walter J.)—866(L)
Wehner, G. K. (see Peterson, A. W.)—213
Weichman, Frank (see Frerichs Rudolf)—711
Weimer, David (see Jahn, Robert G.)—741(L)
Weiner, J. H. Thermoelastic dissipation due to high-speed dislocations—1305
Weisberg, L. R., J. R. Woolston, and M. Glicksman. Electron mobilities in gallium arsenide—1514(L)
Weiser, K. Decomposition method for producing *p-n* junctions in InP—229(L)
Weiss, G. P. (see Smith, D. O.)—290
Weiss, M. T. Solid-state microwave amplifier and oscillator using ferrite—421
Wells, Willard H. Maser oscillator with one beam through two cavities—715
Wenny, D. H. and K. M. Olsen. Casting of Alnico VII with improved physical properties—504
Wenny, D. H. (see Boothby, O. L.)—353
Wentink, T., Jr., W. Planet, P. Hammerling, and B. Kivel. Infrared continuum from high-temperature air—742(L)
Wernick, J. H., J. N. Hobstetter, L. C. Lovell, and D. Dorsi. Dislocation etch pits in antimony—1013
West, D. C. (see Bagley, E. B.)—109(L)
West, D. C. (see Bagley, E. B.)—1511(L)
West, Forrest G. Temperature dependence of the absorption of ultrasound in a nickel single crystal—480
Westrum, Edgar F. (see Grimes, D. N.)—384
White, Donald L. High Q quartz crystals at low temperatures—856
White, Gerald M. Zeros of gaussian noise—723
White, John G. (see Baltzer, Philip K.)—445
White, R. L. (see Solt, I. H., Jr.)—324
Whited, C. R. (see Partridge, William S.)—1332
Whetten, N. R. and A. B. Laponsky. Mechanism of secondary electron emission from MgO single crystals—1374(L)
Whorisky, Peter J. Two chemical stains for marking *p-n* junctions in silicon—867(L)
Wickersham, Arthur F., Jr. Anomalous dispersion in artificial dielectrics—1537
Wickham, D. G. (see Goodenough, J. B.)—382
Wijn, H. P. (see Stuijts, A. L.)—468
Williams, H. J. and R. C. Sherwood. Motion pictures of magnetic writing on thin films on MnBi—296
Williams, H. J. (see Ellis, W. C.)—534
Williams, H. J., R. C. Sherwood, and J. P. Remeika. Magnetic domains in αFe_2O_3—1772(L)
Williams, Malcolm L. Free volume approach to polystyrene melt viscosity—1395
Williams, Robert L. (see Frank, Robert C.)—898
Winslow, D. K. (see Chodrow, M.)—1525
Wittry, David B. The resolution of electron probe microanalysers—1543
Wohlfarth, E. P. Relations between different modes of acquisition of the remanent magnetization of ferromagnetic particles—595(L)
Wold, A., R. J. Arnott, and J. B. Goodenough. Some magnetic and crystallographic properties of the system $LaMn_{1-x}Ni_xO_{3+\lambda}$—387
Wolf, W. P. and G. P. Rodrigue. Preparation of polycrystalline ferrimagnetic garnet materials for microwave applications—105
Wolf, W. P. (see Jones, R. V.)—434
Wolock, Irvin (see Newman, Sanford B.)—49
Wolsky, Sumner P. Preparation and regeneration of clean germanium surfaces—1132(L)
Wong, Eugene (see Thomas, John B.)—1226
Woodward, A. E. (see Sauer, J. A.)—1385
Woodward, A. E. (see Deeley, C. W.)—1415
Wyld, H. W., Jr. Dynamic stability of a self-pinched discharge—1460
Woolston, J. R. (see Weisberg, L. R.)—1514(L)

Yamartino, E. J. (see Lever, R. C.)—304
Yotsumoto, Haruo (see Kōichi, Kanaya)—1046
Young, A. P. Crystallites and twinning in cold-rolled nickel —1127(L)
Young, F. W., Jr. Polygonization of copper—760

Zeender, J. R. (see Schlöman, E.)—341
Zneimer, J. E. (see Sirvetz, M. H.)—431

Subject Index to Volume 29

References with (L) are to Letters to the Editor; (RR) to Research Reports; (E) to Errata

Antennas

Miniaturized resonant antenna using ferrites. D. M. Grimes—401

Ballistics

Crater formation in metallic targets. William S. Partridge, Howard B. Vanfleet, and C. R. Whited—1332

General formulation of a powered flight trajectory optimization problems. Burton D. Fried—1203

Generation of high velocity projectiles. Melvin A. Cook and Robert T. Keyes—1651

On the drag of a sphere at extremely high speeds. V. C. Liu—194

On physics of armor penetration, M. S. Sodha and V. K. Jain—1769(L)

Optimum rocket trajectories. Burton D. Fried and John M. Richardson—874(E)

Studies of high-velocity impact in wax. William S. Partridge and Wallace G. Clay—939

Computing Techniques and Machines

Analog multiplier based on the hall effect. Lars Löfgren —158

New concept in large-size memory arrays—the twistor. Andrew H. Bobeck—485

Nondestructive memory employing a domain oriented steel wire. U. F. Gianola—849

Operating range of a memory using two ferrite plate apertures per bit. M. M. Kaufman and V. L. Newhouse —487

Switching in rectangular loop ferrites containing air gaps. U. F. Gianola—1122(L)

Switching properties of permalloy cores of varying coercivity. Thomas D. Rossing and Vincent J. Korkowski —479

Crystals and Crystal Growth

Crystal growth on cathode sputtered copper films by pairs of double spiral mechanisms analogous to Frank-Read sources. Erich B. Henschke—1495

Crystal growth mechanism in cadmium sulfide crystals. D. C. Reynolds and L. C. Greene—559

Crystallites and twinning in cold-rolled nickel. A. P. Young—1127(L)

Floating crucible technique for growing uniformly doped crystals. W. F. Leverton—1241

Gray tin single crystals. A. W. Ewald and O. N. Tufte —1007

Growing of ferroelectric $PbTiO_3$ crystals. Jinzo Kobayashi —866(L)

Growth of magnetic garnet crystals. J. W. Nielsen—390

Growth of MnBi crystals and evidence for subgrains from domain patterns. W. C. Ellis, H. J. Williams, and R. C. Sherwood—534

Growth of silicon and germanium disks. J. R. O'Connor and W. A. McLaughlin—222(L)

Method for growing single crystals of potassium niobate. C. E. Miller—233(L)

Nucleation and growth in photosensitive glass. R. D. Maurer—1

On the quality of gray tin crystals and their rate of growth. J. H. Becker—1110

Polygonization of copper. F. W. Young—760

Preventing conductivity fluctuations during growth of a semi-conducting crystal. W. G. Pfann, J. N. Hobstetter, and G. S. Indig—1238

Production of cadmium sulfide crystals by coevaporation in a vacuum. R. J. Miller and C. H. Bachman—1277

Production of dislocations during growth from the melt. W. A. Tiller—611

Relation between crystallite orientation and magnetic properties of elongated single-domain iron particles. F. E. Luborsky, E. F. Fullam, and D. S. Hallgren—989

Silicon crystals free of dislocations. William C. Dash—736(L)

(110) [001] component prior to secondary recrystallization in three percent silicon iron. C. G. Dunn—1608(L)

Whisker growth from iodide titanium wire. Allan M. Russell and Robert C. Abbott—1130(L)

X-ray investigation of perfection in tin whiskers. H. G. Smith and R. E. Rundle—679

Defects in Solids

Arrangements of dislocations in plastically bent silicon crystals. J. R. Patel—170

Cleavage cracks and dislocations in LiF crystals. J. J. Gilman, C. Knudsen, and W. P. Walsh—601

Correlation of thermal etch pits with dislocations in silver. J. P. Hirth and L. Vassamillet—595(L)

Creation of dislocations in LiF crystals at low stresses. J. J. Gilman and W. G. Johnston—110(L)

Crystal growth on cathode sputtered copper films by pairs of double spiral mechanisms analogous to Frank-Read sources. Erich B. Henschke—1495

Decoration of dislocations in alkali halide whiskers. S. Amelinckx—1610

Detection of screw dislocations in Al_2O_3 whiskers. R. D. Dragsdorf and W. W. Webb—817

Direct observation of individual dislocations by x-ray diffraction. A. R. Lang—597(L)

Dislocations and selective etch pits in InSb. J. D. Venables and R. M. Broudy—1025

Dislocation etch pit formation in lithium fluoride. J. J. Gilman, W. G. Johnston, and G. W. Sears—747

Dislocation etch pits in antimony. J. H. Wernick, J. N. Hobstetter, L. C. Lovell, and D. Dorsi—1013

Dislocation etch techniques for some alkali halide crystals. P. R. Moran—1768(L)

Dislocation model of low temperature creep. J. Weertman —1685

Dislocations, point-defect clusters, and cavities in neutron irradiated LiF crystals. J. J. Gilman and W. G. Johnston—877

Effect of cation vacancies on the magnetic annealing of cobalt-substitute magnetite. L. R. Bickford, Jr., J. M. Brownlow, and R. F. Penoyer—441

Effect of dislocations on breakdown in silicon p-n junctions. A. G. Chynoweth and G. L. Pearson—1103

Etching studies on photographic grains. J. F. Hamilton, L. E. Brady, and F. A. Hamm—800

Evidence for vacancy clusters in dislocation-free Ge. A. G. Tweet—1520

Evidence of dislocation jogs in deformed silicon. William C. Dash—705

Examination of the validity of the critical resolved twinning stress hypothesis. A. R. Rosenfield—227(L)

Formation of growth spirals on cuprous oxide grown on copper single crystals. G. Tyler Miller, Jr. and Kenneth R. Lawless—863(L)

Hillocks, pits and etch rate in germanium crystals. Boris W. Batterman—233(E)

Imperfection dependence of the catalytic decomposition of H_2O_2 on Al_2O_3. R. N. Tucker and P. Gibbs—1374(L)
Impurity penetration along dislocation lines in α-Al_2O_3. R. N. Tucker and P. Gibbs—1375(L)
Influence of doping on diffusion rate of impurities in cathode nickel. Hiroyuki Mizuno—1265(L)
Interactions between oxygen and acceptor elements in silicon. C. S. Fuller and F. H. Doleiden—1264(L)
Internal friction in aluminum at low temperatures. A. J. Filmer, G. J. Hutton, and T. S. Hutchison—146
Investigation of low-temperature internal friction. Hollis L. Caswell—1210
Movement of dislocation loops in lithium fluoride. S. Amelinckx and W. Dekeyser—1000(L)
Nucleation of dislocations accompanying electric breakdown in LiF crystals. J. J. Gilman and D. W. Stauff—120
Observations of dislocations in iron whiskers. R. V. Coleman—1487
Orientation dependence of ultrasonic attenuation in zinc P. C. Waterman—1190
Polygonization of copper. F. W. Young—760
Production of dislocations during growth from the melt. W. A. Tiller—611
Production of dislocations in germanium by thermal shock R. S. Wagner—1679
Revealing dislocation sites in aluminum by transmission electron microscopy. D. L. Robinson—1635
Silicon crystals free of dislocations. William C. Dash—736(L)
Thermoelastic dissipation due to high-speed dislocations. J. H. Weiner—1305
Twinning in explosively loaded steel. Sampooran Singh and A. Soundraraj—111(L)
Twinning in tabular photographic grains. J. F. Hamilton and L. E. Brady—994(L)
X-ray study of faults in body-centered cubic metals. O. J. Guentert and Bert Warren—40

Dielectrics and Dielectric Breakdown Insulators

Anisotropic effects in geometrically isotropic lattices. Zohrab A. Kaprielian—1052
Anomalous dispersion in artificial dielectrics. Arthur F. Wickersham, Jr.—1537
Blunting of tungsten needles by surface diffusion. J. L. Boling and W. W. Dolan—556
The decoration of dislocations in alkali halide whiskers. S. Amelinckx—1610(L)
Dielectric relaxation spectra of lithium borosilicate glasses. L. Heroux—1639
Dislocation etch techniques for some alkali halide crystals. P. R. Moran—1768(L)
Nucleation of dislocations accompanying electric breakdown in LiF crystals. J. J. Gilman and D. W. Stauff—120
Some effects of nonuniform fields on dielectrics. Herbert Ackland Pohl—1182
Use of complex conductivity in the representation of dielectric phenomena. F. A. Grant—76

Diffusion

Analyses for diffusion during plastic deformation. J. Simmons and J. E. Dorn—1308
Analysis of diffusion in media undergoing deformation. H. Fara and R. W. Balluffi—1133(L)
Anisotropy of boundary mobility. S. Kohara, M. N. Parthasarathi, and Paul A. Beck—1125(L)
Crack-free alloyed junctions in silicon using pure aluminum. Theodore C. Taylor—865(L)
Diffusion and elastic collision losses of the "fast electrons" in plasms. G. Medicus—903
Diffusion of gallium in silicon. A. D. Kurtz and C. L. Gravel—1456
Diffusion of indium in tin single crystals. Anton Sawatzky—1303
Diffusion of tungsten in nickel and reaction at interface with SrO. Herbert W. Allison and George E. Moore—842
Donor diffusion in oxide cathodes. R. W. Peterson—1383(E)
Germanium arsenide as diffusion surface compound. Worden Waring, Douglas T. Pitman, and S. Robert Steele—1002(L)
Improved diffusion boundary junctions in silicon due to scratch-free polishing. F. Keywell—871(L)
Impurity penetration along dislocation lines in α-Al_2O_3. R. N. Tucker and P. Gibbs—1375(L)
Influence of doping on diffusion rate of impurities in cathode nickel. Hiroyuki Mizuno—1265(L)
Mass spectrometer measurements of the diffusion coefficient of hydrogen in steel in the temperature range of 25°–90°C. Robert C. Frank, Don E. Swets, and David L. Fry—892
Measurements of quenching stresses in a bearing ring by interference fringes. Toshio Mura and Hiroshi Yoshimoto—115
Model for solute diffusion in crystals with the diamond structure. R. A. Swalin—670
Nondiffusibility of oxygen through platinum. Francis J. Norton—1122(L)
Note on diffusive separation of gas mixtures in flow fields. V. C. Liu—1188
Radiation enhanced diffusion in solids. G. J. Dienes and A. C. Damask—1713
Ratio of the diffusion coefficients for the diffusion of hydrogen and deuterium in steel. Robert C. Frank, Robert W. Lee, and Robert L. Williams—898
Some observations regarding the present status of measurements of the diffusion coefficients of hydrogen in iron and mild steel. Robert C. Frank—1262(L)

Elasticity and Inelasticity

Adiabatic elastic moduli of single crystal alpha-uranium. E. S. Fisher and H. J. McSkimin—1473
Approximate elastic spectrum of β-AuZn from temperature diffuse scattering of x-rays. Milton Schwartz and Leonard Muldawer—1561
Cooling time of strong glass fibers. O. L. Anderson—9
Critical study of the optical and mechanical properties of glass. Sydney Bateson—13
Crossbending tests of glass fibers and the limiting strength of glass. R. E. Mould—1263(L)
Dispersion curves for longitudinal and flexural waves in solid circular cylinders. Edward A. Flinn—1261(L)
Dynamic fatigue of glass. R. J. Charles—1657
Effect of elastic bending on magnetic properties of oriented silicon iron. R. W. Cole—370
The effect of statically applied stresses on the velocity of propagation of ultrasonic waves. R. H. Bergman and R. A. Shahbender—1736
Effect of torsional stress on the electrode potential of copper. Ken Nobe and William F. Seyer—1632
Elastic constants by the ultrasonic pulse echo method. S. Eros and J. R. Reitz—683
Magnetostriction and elastic properties of ferromagnetic substances at high magnetic fields. Hiroshi Sato—456
Material fringe value sign reversal in paraplex and castolite. Herbert Becker—1771(L)
Mechanical behavior of a polymer at temperatures through the glass transition temperature. J. R. Stevens and D. G. Ivey—1390

Elasticity and Inelasticity (*continued*)
Measurement of the isothermal volume dilation accompanying the unilateral extension of rubber. Fred G. Hewitt and Robert L. Anthony—1411
Modulus of rupture of *zxt* 45 ADP crystals. B. J. Faraday and D. J. G. Gregan—1099
Time dependence of mechanical breakdown in bundles of fiber. IV. Infinite ideal bundle under oscillating loads. Bernard D. Coleman and Donald W. Marquardt—1091
Static fatigue of glass. I. R. J. Charles—1549
Static fatigue of glass. II. R. J. Charles—1554
Stress-strain equation for rubber in tension. W. E. Claxton—1398
Surface motions of a thick plate. L. Knopoff—661
Thermoelastic dissipation due to high-speed dislocations. J. H. Weiner—1305
Ultrasonic interferometer for the measurement of the temperature dependence of elastic constants. R. P. Espinola and P. C. Waterman—718

Electrical Circuits and Networks
Definition of passive linear networks in terms of time and energy. G. Raisbeck—1004(E)
Gain, band width, and noise characteristics of the variable-parameter amplifier. H. Heffner and G. Wade—1321
Parametric amplification and frequency mixing in propagating circuits. P. K. Tien—1347
Parametric amplification of space charge waves. A. Ashkin—1646
Parametric amplification using low-frequency pumping. S. Bloom and K. K. N. Chang—594(L)

Electrical Conductivity
Electrical properties and thermal expansion of the laves phases, $CaMg_2$ and $MgCu_2$. J. F. Smith and J. R. Orgen—1523
n-type and *p*-type conduction in alkali-antimonide photoemitters. A. H. Sommer—1568
Nature of electrical resistivity of the ferromagnetic metals at low temperatures. E. Kondorsky, O. S. Galkina, and L. A. Tchernikova—243
Recovery of electrical resistivity of Cu, Au, and Ni following cold work at 4°K. C. J. Meechan and A. Sosin—738(L)
Variation in the temperature derivative of resistivity. T. G. Knorr and R. W. Hoffman—1512(L)

Electrical Contacts
The effect of torsional stress on the electrode potential of copper. Ken Nobe and William F. Seyer—1632
Ohmic probe contacts to CdS crystals. Y. T. Sihvonen and D. R. Boyd—1143
Physical processes in contact erosion. L. H. Germer—1067

Electrical Discharges in Gases
Analysis of the emissive phase of a pulsed maser. H. H. Theissing, F. A. Dieter, and P. J. Caplan—1673
Arc movement in a magnetic field. A. E. Guile and P. E. Secker—1662
Cohesion in plasma. M. A. Cook and William S. McEwan—1612
Determination of the equilibrium temperature of a plasma. Philip J. Dickerman—598(L)
Diffusion and elastic collision losses of the "fast electrons" in plasmas. G. Medicus—903
Dynamic stability of a self-pinched discharge. H. W. Wyld, Jr.—1460
Electron cooling by heat exchange. R. C. Knechtli and W. Knauer—1513(L)
Electron recombination coefficient measurements in nitrogen at low pressures. A. C. Faire, O. T. Fundingsland, A. L. Aden, and K. S. W. Champion—928
Experimental study of dc corona at high temperatures and pressures. John B. Thomas and Eugene Wong—1226
Further comments on ionizing shock waves in monatomic gases. William J. Guman—109(L)
Impedance and recovery time of glow discharges in mixtures of rare gases. G. Ahsmann and H. J. Oskam—1768(L)
Lateral-current control mechanism for cold-cathode gas discharges. D. J. Belknap and L. R. Crump—737(L)
Mechanism of cataphoretic segregation in inert gas glow discharges. Leonard B. Loeb—1369
Microwave method for measuring the probability of elastic collision of electrons in a gas. Jay L. Hirshfield and Sanborn C. Brown—1749
Neutron generation from straight pinches. R. E. Dunway and J. A. Philips—1137
Noise and electron temperatures of some cold cathode argon discharges. E. W. Collings—1215
Production of high velocity shocks. Vernal Josephson—30
Production of millimeter waves by a spark generator. John Hart—743(L)
Stability studies with longitudinal magnetic field on a straight pinched discharge. L. C. Burkhardt, R. H. Lovberg, G. A. Sawyer, and T. F. Stratton—964
Theory of the retrograde motion. G. Ecker and K. G. Müller—1606
Thermometric study of the frozen products from the nitrogen microwave discharge. B. J. Fontana—1668

Electromagnetic Waves
Anomalous dispersion in artificial dielectrics. Arthur F. Wickersham, Jr.—1537
Apparent temperatures of some terrestrial materials and the sun at 4.3-millimeter wavelengths. A. W. Straiton, C. W. Tolbert, and C. O. Britt—776
Diffraction by a perfectly absorbing thin screen. C. C. Derwin—921
Diffraction by an aperture. Joseph B. Keller—744(E)
Diffraction patterns at the plane of a slit in a reflecting screen. R. K. Hadlock—918
General solution of the Luneberg lens problem. Samuel P. Morgan—1358
Maser amplifier characteristics for transmission and reflection cavities. Malcolm L. Stitch—782
Microwave faraday rotation: design and analysis of a bimodal cavity. A. M. Portis and Dale Teaney—1692
Microwave method for measuring the probability of elastic collision of electrons in a gas. Jay L. Hirshfield and Sanborn C. Brown—1649
On the reflection of electromagnetic waves on a rough surface. M. A. Biot—998(L)
Production of millimeter waves by a spark generator. John Hart—743(L)
Solution to the equations of space-charge flow by the method of the separation of variables. P. T. Kirstein and G. S. Kino—1758
Some observations of the effect of radiation on the refractive indices of certain gases. C. M. Crain—1605

Electron and Ion Optics
Analysis of a multipole state separator and focuser for polarizable molecules. Friedrich O. Vonbun—632
Mass determination of ions by Bennett ion rf mass spectrometer. Charles Y. Johnson—740(L)
Note on positive-ion effects in pulsed electron beams. Jose T. Senise—839
Rippling of thin electron ribbons. William E. Waters—100

Electron Beams
Appraisal of permanent magnet materials for magnetic focusing of electron beams. Myron S. Glass—403

Beam noise in crossed electric and magnetic fields. R. P. Little, H. M. Ruppel, and S. T. Smith—1376
Design of linear electron accelerators with beam loading. Richard B. Neal—1019
Dynamics of electron beams and magnetically shielded guns. Arthur Ashkin—1594
Effect of variation of dc current in a modulated electron beam. I. P. Shkarofsky—222(L)
Excitation of short infrared pulses with high repetition rate by electron bombardment of cuprous oxide. Rudolf Frerichs and Frank Weichman—710
Investigation of the perveances and beam profiles of an aperture disk emission system. E. R. Harrison—909
Magnetic writing with an electron beam. Ludwig Mayer —1454
Note on positive-ion effects in pulsed electron beams. Jose T. Senise—839
Optical theory of thermal velocity effects in cylindrical electron beams. Gabriel Herrmann—127
rf current distribution in modulated magnetically focused electron beams. M. Chodorow, H. J. Shaw, and D. K. Winslow—1525
Rippling of thin electron ribbons. William E. Waters—100
Resolution of electron probe microanalyzers. D. B. Wittry —1543
Small signal power conservation theorem for irrotational electron beams. J. Wilhelm Klüver—618
Spectral characteristics of the radiation emitted by electrons accelerated in a synchrotron. D. H. Tomboulian and D. E. Bedo—804
Sputtering of surfaces by positive ion beams of low energy. Richard E. Honig—549
Stability of an electron beam on a slalom orbit. J. S. Cook, W. H. Louisell, and W. H. Yocum—583

Electron Diffraction

Application of the ion bombardment-cleaning method to titanium, germanium, silicon, and nickel as determined by low-energy electron diffraction. H. E. Farnsworth, R. E. Schlier, T. H. George, and R. M. Burger—1150
Diffusion of tungsten in nickel and reaction at interface with SrO. Herbert W. Allison and George E. Moore —842
Resolution of electron probe microanalyzers. D. B. Wittry —1543

Electron Emission

Activation of silver-magnesium and copper-beryllium dynodes. A. H. Sommer—598(L)
Donor diffusion in oxide cathodes. R. W. Peterson—1383(E)
Electron cooling by heat exchange. R. C. Knechtli and W. Knauer—1513(L)
Energy distribution half-widths for field emission electrons. E. L. Murphy—758
Field emission from silicon. L. A. D'Asaro—33
Interaction of low-energy electrons with ferroelectric materials. Robert C. Miller and Robert D. Heidenreich—957
Liberation of electrons by fast neutral helium atoms from a tungsten target. H. W. Berry—1219
Measurement of instantaneous absolute barium evaporation rates from dispenser cathodes. W. C. Rutledge, A. Milch, and E. S. Rittner—834
Mechanism of electron emission from the arc cathode. A. von Engel and A. E. Robson—734(L)
Mechanism of secondary electron emission from MgO single crystals. N. R. Whetten and A. B. Laponsky—1374(L)
Noise in oxide cathode coatings. H. J. Hannam and A. van der Ziel—1702
On the discussion of the T-F theory by Robson and von Engel. T. H. Lee—734(L)
On the mechanism of operation of the barium aluminate impregnated cathode. E. S. Rittner, W. C. Rutledge, and A. H. Ahlert—744(E)
Thermionic emission from barium activated molybdenum. E. S. Rittner and R. H. Ahlert—61

Electron Microscopy

Blunting of tungsten needles by surface diffusion. J. L. Boling and W. W. Dolan—556
Electron mirror microscopy of patterns recorded on magnetic tape. Ludwig Mayer—658
Examination of the surface and domain structure in ceramic barium titanate. Victor J. Tennery and Franklin E. Anderson—755
Experiment on the electron phase microscope. Kōichi Kanaya, Hisazo Kawakatsu, Kazuo Itō, and Haruo Yotsumoto—1046
Graphical method for estimation of contrast in electron microscopy. P. Sadhukhan—1235
Method for making successive replicas of the same spot. J. T. Fourie—608
Revealing dislocation sites in aluminum by transmission electron microscopy. D. L. Robinson—1635
Some results of an electron microscopical study of the metallographic structure of two alloys for permanent magnets (Ticonal G and Ticonal X). J. J. deJong, J. M. G. Smeets, and H. B. Haanstra—297
Twinning in tabular photographic grains. J. F. Hamilton and L. E. Brady—994(L)

Electron Tubes

Activation of silver-magnesium and copper-beryllium dynodes. A. H. Sommer—598(L)

Electrostatics

The numerical calculation of certain small electrostatic effects. R. Cade and K. A. Small—53

Explosives and Explosions

Crater formation in metallic targets. William S. Partridge, Howard B. Vanfleet, and C. R. Whited—1332
Initial wave phenomena in a weak spherical blast. R. Gordon Campbell—55
Generation of high velocity projectiles. Melvin A. Cook and Robert T. Keyes—1651
Twinning in explosively loaded steel. Sampooran Singh and A. Soundraraj—111(L)
Use of an electro-optical method to determine detonation temperatures in high explosives. F. C. Gibson, M. L. Bowser, C. R. Summers, F. H. Scott, and C. M. Mason —628

Ferroelectricity

Electrical stability of $BaTiO_3$ single crystals at −195°C. H. L. Stadler—743(L)
Ferroelectric switching time of $BaTiO_3$ crystals at high voltages. H. L. Stadler—1485
Growing of ferroelectric $PbTiO_3$ crystals. Jinzo Kobayashi —866(L)
Interaction of low-energy electrons with ferroelectric materials. Robert C. Miller and Robert D. Heidenreich—957
Method for growing single crystals of potassium niobate. C. E. Miller—233(L)
Phenomenological theory of polarization reversal in $BaTiO_3$ single crystals. Charles F. Pulvari and Wolf Kuebler—1315
Polarization reversal in tri-glycine fluoberyllate and tri-glycine sulfate single crystals. Charles F. Pulvari and Wolf Keubler—1742
Primary pyroelectricity in barium titanate ceramics. T. A. Perls, T. J. Diesel, and W. I. Dobrov—1297

Ferroelectricity (*continued*)
Ultra-low-velocity component of spontaneous polarization in $BaTiO_3$ single crystal. Kazuo Husimi—1379(L)
Ultrasonic measurement of polarization switching processes in barium-titanate single crystal. K. Husimi and K. Kataoka—1247

Ferromagnetic Materials and Ferrites
Analogy between directional ordering and the magnetic diffusion aftereffect. P. Brissonneau—249
Antiferromagnetic domain walls and the magnetization process in α-Fe_2O_3. I. S. Jacobs and C. P. Bean—537
Antiferromagnetic structures of MnS_2, $MnSe_2$, and $MnTe_2$. L. M. Corliss, N. Elliott, and J. M. Hastings—391
Appraisal of permanent magnet materials for magnetic focusing of electron beams. Myron S. Glass—403
Behavior of the Te modes in ferrite loaded rectangular wave guide in the region of ferrimagnetic resonance. W. J. Crowe—397
Calculation of the energy loss in magnetic sheet materials using a domain model. R. H. Pry and C. P. Bean—532
Casting of alnico VII with improved physical properties. D. H. Wenny and K. M. Olsen—504
Coercive force of iron oxide micropowders at low temperatures. A. H. Morrish and L. A. K. Watt—1029
Constraint principle in ferromagnetic domain theory. Louis Gold—544
Crystallographic and magnetic studies of the system $(NiFe_2O_4)_{1-x}$ $(NiMn_2O_4)_x$. Philip K. Baltzer and John G. White—445
Cube texture in body centered magnetic alloys. G. Wiener, P. A. Albert, R. H. Trapp, and M. F. Littmann—366
Design of optimum inductors using magnetically hard ferrites in combination with magnetically soft materials. J. T. Ludwig—497
Development of preferred orientations in silicon iron. J. R. Brown—359
Domain wall motion in metals. R. W. DeBlois—459
Effect of a transverse field on switching rates of magnetic memory cores. Thomas D. Rossing and Sidney M. Rubens—1245
Effect of cation vacancies on the magnetic annealing of cobalt-substitute magnetite. L. R. Bickford, Jr., J. M. Brownlow, and R. F. Penoyer—441
Effect of cobalt on the relaxation frequency of nickel-zinc ferrite. F. J. Schnettler and F. R. Monforte—477
Effect of elastic bending on magnetic properties of oriented silicon iron. R. W. Cole—370
Effect of hydrostatic pressure and temperature on the magnetic properties of a nickel-zinc ferrite. C. Q. Adams and C. M. Davis, Jr.—372
Effect of neutron irradiation on the curie temperature of a variety of ferrites. E. I. Salkovitz, G. C. Bailey, and A. I. Schindler—1747
Effect of sample thickness on the field annealing of 6.5% Si-Fe. P. A. Albert—351
Effect of thermal history on the antiferromagnetic transition in zinc ferrite. D. N. Grimes and Edgar F. Westrum, Jr.—384
Effects of composition and processing variables on the magnetic properties of the 50% nickel-iron alloy. M. J. Savitski—353
Effects of heat treatment of thin ferromagnetic films at intermediate temperatures. E. N. Mitchell—286
Effects of magnetic fields upon anisotropic iron crystals. John H. L. Watson, Anthony Arrott, and Michael W. Freeman—306
Energy distribution in partially ferrite-filled wave guides. J. E. Tompkins—399
Exchange anisotropy in the iron-iron oxide system. W. H. Meiklejohn—454
Ferrimagnetic resonance in gadolinium iron garnet. B. A. Calhoun, W. V. Smith, and J. Overmeyer—427
Ferrimagnetic resonance in single crystals of rare earth garnet materials. R. V. Jones, G. P. Rodrigue, and W. P. Wolf—434
Ferromagnetic resonance in polycrystalline nickel ferrite aluminate. E. Schlomann and J. R. Zeender—341
Ferromagnetic resonance in yttrium iron garnet at low frequencies. E. G. Spencer, R. C. LeCraw, and C. S. Porter—429
Flux reversal in thin films of 82% Ni, 18% Fe. C. D. Olson and A. V. Pohm—274
Further magnetic and x-ray diffraction studies on iron-rich iron aluminum alloys. A. Taylor and R. M. Jones —522
Growth of magnetic garnet crystals. J. W. Nielsen—390
An improved x-ray method for determining cation distribution in ferrites. L. P. Skolnick, S. Kondo, and L. R. Lavine—198
Ionic valences in manganese-iron spinels. Andrew H. Eschenfelder—378
Loss of exchange coupling in the surface layers of ferromagnetic particles. F. E. Luborsky—309
Low-frequency rotational hysteresis losses in ferrites. Henry Seiwatz—994(L)
Low residual induction in high-aluminum iron alloys. D. Pavlovic and K. Foster—368
Magnetic anisotropy induced by magnetic annealing and by cold working of Ni_3Fe crystal. Sōshin Chikazumi—346
Domain observations on iron whiskers. R. W. DeBlois and C. D. Graham, Jr.—528
Magnetic domain patterns on iron whiskers. R. V. Coleman and G. G. Scott—526
Magnetic domains in α-Fe_2O_3. H. J. Williams, R. C. Sherwood, and J. P. Remeika—1772
Magnetic fluctuations in molybdenum permalloy. James J. Brophy—483
Magnetic germanates isostructural with garnet. Arthur Tauber, Ephraim Banks, and Horst H. Kedesdy—385
Magnetic materials for use at high microwave frequencies (50–90 kMc/sec). F. K. Du Pre, D. J. De Bitetto, and F. G. Brockman—1127(L)
Magnetic properties of cube textured silicon-iron magnetic sheet. J. L. Walter, W. R. Hibbard, H. C. Fiedler, H. E. Grenoble, R. H. Pry, and P. G. Frischmann—363
Magnetic resonance of ferrites with a compensation temperature. J. Pauleve—259
Magnetic writing with an electron beam. Ludwig Mayer—1454
Magnetization processes in heat-treated single crystal cobalt ferrite. S. Foner and J. O. Artman—443
Magnetization reversal by rotation. P. R. Gillette and K. Oshima—529
Magnetocrystalline anisotropy of Mg-Fe ferrites: temperature dependence, ionic distribution effects, and the crystalline field model. V. J. Folen and G. T. Rado—438
Magnetostriction and elastic properties of ferromagnetic substances at high magnetic fields. Hiroshi Sato—456
Measurement of losses of magnetic materials at high inductions, at frequencies up to 100 megacycles. Isidore Bady—393
Measurement of the properties of various ferrites used in magnetically tuned resonant circuits in the 2.5–45 mc/sec region. Pietro P. Lombardini, Richard F. Schwartz, and Richard J. Doviak—395
Method for measuring magnetostriction corrected for initial domain distribution and its application to nickel and iron. H. E. Stauss—182
Method for measuring saturation magnetization in ring samples. C. D. Graham—68

Microuniformity of permanent magnets. L. E. Mendelsohn —407
Microwave frequency conversion studies in magnetized ferrites. E. N. Skomal and M. A. Medina—423
Microwave properties of polycrystalline rare earth garnets. M. H. Sirvetz and J. E. Zneimer—431
Miniaturized resonant antenna using ferrites. D. M. Grimes—401
Nature of electrical resistivity of the ferromagnetic metals at low temperatures. E. Kondorsky, O. S. Galkina, and L. A. Tchernikova—243
New concept in large-size memory arrays—the twistor. Andrew H. Bobeck—485
New magnetic core loss comparator. R. E. Tompkins, L. H. Stauffer, and A. Kaplan—502
New type of ferromagnetic amplifier. C. L. Hogan, R. L. Jepsen, and P. H. Vartanian—422
Observation of domains in the ferrimagnetic garnets by transmitted light. J. F. Dillon, Jr.—1286
Operating range of a memory using two ferrite plate apertures per bit. M. M. Kaufman and V. L. Newhouse —487
Optical properties of several ferrimagnetic garnets. J. F. Dillon, Jr.—539
Orientation study of ultra-thin molybdenum permalloy tape. P. K. Koh—636
Origin of magnetic anisotropy in $Co_xFe_{3-x}O_4$. J. C. Slonczewski—448
Performance of permanent magnets at elevated temperatures. W. H. Roberts—405
Phase analysis of Alnico V based on temperature effects. R. K. Tenzer and K. J. Kronenberg—302
Physical and magnetic properties of elongated single-domain iron and iron-cobalt permanent magnets. R. C. Lever, E. J. Yamartino, and R. B. Falk—304
Preferential volatilization of cations from ferrites during sintering. J. M. Brownlow—373
Preparation and properties of crystal-oriented ferroxplana samples. A. L. Stuijts and H. P. J. Wijn—468
Preparation of polycrystalline ferrimagnetic garnet materials for microwave applications. W. P. Wolf and G. P. Rodrigue—105
Pulse generator based on high shock demagnetization of ferromagnetic material. R. W. Kulterman, F. W. Neilson, and W. B. Benedick—500
Pyromagnetic effect: a method for determining curie points. A. G. Chynoweth—563
Relation between colloid pattern and permanent magnet precipitate during magnetization reversal in Alnico V. K. J. Kronenberg and R. K. Tenzer—299
Relationship between single crystal and effective polycrystalline anisotropy constants in ferrites. C. J. Kriessman, S. E. Harrison, and H. S. Belson—452
Relations between different modes of acquisition of the remanent magnetization of ferromagnetic particles. E. P. Wohlfarth—595(L)
Reversible rotation in magnetic films. Richard M. Sanders and Thomas D. Rossing—288
Rigorous approach to the theory of ferromagnetic microstructure. William Fuller Brown, Jr.—470
Rotational model of flux reversal in square loop soft ferromagnets. E. M. Gyorgy—283
(110) [001] secondary recrystallization texture in three percent silicon-iron. H. C. Fiedler—361
Shape distribution of magnetic powders. Clark E. Johnson, Jr. and William Fuller Brown, Jr.—1699
Size dependence of the wall characteristics in a two-domain iron particle. Henri Amar—542
Skullcap method for magnetizing bowl-shaped magnetron magnets. Francis X. MacDonough—506
Solid-state microwave amplifier and oscillator using ferrite. M. T. Weiss—421
Some aspects of tempering 3¼% silicon steel as followed by time decay permeability. E. S. Anolick and Joseph Singer—412
Some ferrimagnetic properties of the system $Li_xNi_{1-x}O$. J. B. Goodenough, D. G. Wickham, and W. J. Croft—382
Some magnetic and crystallographic properties of the system $LaMn_{1-x}Ni_xO_{3+\lambda}$. A. Wold, R. J. Arnott, and J. B. Goodenough—387
Some properties of quenched magnesium magnetism ferrites. D. J. Epstein and B. Frackiewicz—376
Some results of an electron microscopical study of the metallographic structure of two alloys for permanent magnets (Ticonal G and Ticonal X). J. J. deJong, J. M. G. Smeets, and H. B. Haanstra—297
Spin-lattice relaxation time in yttrium iron garnet. R. T. Farrar—425
Spontaneous magnetization of some garnet ferrites and the aluminum substituted garnet ferrites. R. Pauthenet—253
Structure and ferrimagnetism of the ilmenite compound $MnNiO_3$. E. F. Bertaut and F. Forrat—247
Substitution for iron in ferrimagnetic yttrium-iron garnet. M. A. Gilleo and S. Geller—380
Switching in rectangular loop ferrites containing air gaps. U. F. Gianola—1122(L)
Switching properties of permalloy cores of varying coercivity. Thomas D. Rossing and Vincent J. Korkowski—479
Temperature dependence of ferromagnetic anisotropy. W. J. Carr, Jr.—436
Temperature dependence of magnetic properties of silicon-iron. C. W. Chen—1337
Temperature dependence of microwave permeabilities for polycrystalline ferrite and garnet materials. J. Nemarich and J. C. Cacheris—474
Temperature dependence of the absorption of ultrasound in a nickel single crystal. Forrest G. West—480
Theory of magnetostriction and g factor in ferrites. Noburo Tsuya—449
Theory of nonreciprocal ferrite phase shifters in dielectric-loaded coaxial line. Kenneth J. Button—998(L)
Time decrease of permeability in iron. G. W. Rathenau—239
Transitions from ferromagnetism to antiferromagnetism in iron aluminum alloys. H. Sato and A. Arrott—515
Transparent ferromagnetic light modulator using yttrium iron garnet. C. S. Porter, E. G. Spencer, and R. C. LeCraw—495
Transverse flux change in soft ferromagnetics. Floyd B. Humphrey—284
Understanding and predicting permanent magnet performance by electrical analog methods. R. J. Parker—409
Uniaxial magnetic anisotropy induced in Fe-Ni alloys by magnetic anneal. Eric T. Ferguson—252
Unusual magnetic behavior of disordered Ni_3Mn. J. S. Kouvel, C. D. Graham, Jr. and J. J. Becker—518

Fluid Dynamics

Hydrodynamics of a reacting and relaxing fluid. R. M. Mazo and J. E. Mayer—735(L)
Initial wave phenomena in a weak spherical blast. R. Gordon Campbell—55
Intrinsic bulk viscosity in monatomic and diatomic gases. R. E. Nettleton—204
Laminar flow in an annulus with porous walls. Abraham S. Berman—71
On the drag of a sphere at extremely high speeds. V. C. Liu—194

Fluid Flow, Low Speed
Effects of lateral boundaries on natural convection. Robert K. Soberman—872(L)
Experiments in liquid atomization by air streams. Henry F. Hrubecky—572
Flow of a viscous liquid on a rotating disk. Alfred G. Emslie, Francis T. Bonner, and Leslie G. Peck—858
Laminar flow in an annulus with porous walls. Abraham S. Berman—71
Note on diffusive separation of gas mixtures in flow fields. V. C. Liu—1188

Fracture
Cleavage cracks and dislocations in LiF crystals. J. J. Gilman, C. Knudsen, and W. P. Walsh—601
Crossbending tests of glass fibers and the limiting strength of glass. R. E. Mould—1263(L)
Dynamic fatigue of glass. R. J. Charles—1657
Effect of origin flaw characteristics on glass strength. W. C. Levengood—820
Fracture phenomena and molecular weight in polymethyl methacrylate. Sanford B. Newman and Irvin Wolock—49
High-speed fracture in rubber. Peter Mason—1146
Note on stress rupture in glass. Eugene F. Poncelet—1382(L)
Tensile strength of plastics: effects of flaws and chain relaxation. F. Bueche—1231
Static fatigue of glass. I. R. J. Charles—1549
Static fatigue of glass. II. R. J. Charles—1554
Some effects of environment on fracture stress of germanium. P. Breidt, Jr., J. N. Hobstetter, and W. C. Ellis—226(L)
Statistics and time dependence of mechanical breakdown in fibers. Bernard D. Coleman—968
Stress rupture in glass. Harold A. Elliott—224

Friction and Wear
Friction coefficients of graphite over the temperature interval 25°C to 2450°C. Allen R. Driesner and Paul Wagner—901
On asperity distributions of metallic surfaces. F. F. Ling—1168
Some aspects of the thermal desorption of a boundary lubricant. E. P. Kingsbury—888
Wear debris in the contact between sliding metals. M. Cocks—1609

Geophysics
Freezing of liquids in porous media with special reference to frost heave in soils. K. A. Jackson and Bruce Chalmers—1178
Surface motions of a thick plate. L. Knopoff—661
Volumes and surface areas of pendular rings. Walter Rose—687

Liquids
Bulk viscosity of liquids. Nishio Hirai and Henry Eyring—810
Factors determining the oxygen content of liquid silicon at its melting point. W. Kaiser and J. Breslin—1292
On the nature and location of bubble nuclei in boiling from surfaces. S. G. Bankoff, A. J. Hajjar, and B. M. McGlothlin—1739

Luminescence
Electrophotoluminescent amplification. R. E. Halsted—1706
Electron excitation of bilayer screens. L. R. Koller and H. D. Coghill—1064

Magnetic Resonance
Analysis of the emissive phase of a pulsed maser. H. H. Theissing, F. A. Dieter, and P. J. Caplan—1673
Corrections for nuclear magnetic resonance measurements. David W. McCall—739(L)
Damping and the dispersion relations in antiferromagnetic resonance. E. S. Dayhoff—344
Effect of electronic mean free path on spin-wave resonance in ferromagnetic metals. George T. Rado—330
Ferrimagnetic resonance in gadolinium iron garnet. B. A. Calhoun, W. V. Smith, and J. Overmeyer—427
Ferromagnetic resonance at uhf in thin films. R. H. Kingston and P. E. Tannenwald—232(L)
Ferrimagnetic resonance in single crystals of rare earth garnet materials. R. V. Jones, G. P. Rodrigue, and W. P. Wolf—434
Ferromagnetic dynamical response. Herbert B. Callen—333
Ferromagnetic resonance and nonlinear effects in yttrium iron garnet. R. C. LeCraw, E. G. Spencer, and C. S. Porter—326
Ferromagnetic resonance in polycrystalline nickel ferrite aluminate. E. Schlomann and J. R. Zeender—341
Ferromagnetic resonance in ultrathin films. M. H. Seavey, Jr. and P. E. Tannenwald—292
Ferromagnetic resonance in uniaxial polycrystalline materials. C. A. Morrison and N. Karayianis—339
Ferromagnetic resonance in yttrium iron garnet at low frequencies. E. G. Spencer, R. C. LeCraw, and C. S. Porter—429
Gain, band width, and noise characteristics of the variable-papameter amplifier. H. Heffner and G. Wade—1321
Inhomogeneous broadening of magnetic resonance lines. A. M. Clogston—334
Low-temperature spin-wave resonance at 3000 and 4000 Mc/sec in a permalloy having nearly zero magneto-crystalline anisotropy. J. R. Weertman and G. T. Rado—328
Magnetic resonance of ferrites with a compensation temperature. J. Pauleve—259
Masers. C. H. Townes—238
Maser amplifier characteristics for transmission and reflection cavities. Malcolm L. Stitch—782
Maser amplifier characteristics for transmission and reflection cavities. Malcolm L. Stitch—1383(E)
Maser oscillator with one beam through two cavities. Willard H. Wells—714
Minimum noise figure of a parametric amplifier. H. Heffner and G. Wade—1262
Multiplicities of the uniform precessional mode in ferrimagnetic resonance. I. H. Solt, Jr., R. L. White, and J. E. Mercereau—324
New type of ferromagnetic amplifier. C. L. Hogan, R. L. Jepsen, and P. H. Vartanian—422
Origin and use of instabilities in ferromagnetic resonance. H. Suhl—416
Origin of ferromagnetic resonance line broadening in manganese-rich manganese ferrites. S. E. Harrison, H. S. Belson, and C. J. Kriessman—337
Parametric amplification and frequency mixing in propagating circuits. P. K. Tien—1347
Resonant modes of ferromagnetic spheroids. L. R. Walker—318
Solid-state microwave amplifier and oscillator using ferrite. M. T. Weiss—421
Study of precipitate particles in Cu-Co employing ferromagnetic resonance. D. S. Rodbell—311
Theory of magnetostriction and g factor in ferrites. Noburo Tsuya—447

Magnetism

Analogy between directional ordering and the magnetic diffusion aftereffect. P. Brissonneau—249

Antiferromagnetic domain walls and the magnetization process in α-Fe_2O_3. I. S. Jacobs and C. P. Bean—537

Calculation of the energy loss in magnetic sheet materials using a domain model. R. H. Pry and C. P. Bean—532

Casting of Alnico VII with improved physical properties. D. H. Wenny and K. M. Olson—504

Coercive force of iron oxide micropowders at low temperatures. A. H. Moorish and L. A. K. Watt—1029

Comments on a theory of double bloch walls in thin films. Robert E. Behringer—1380(L)

Constraint principle in ferromagnetic domain theory. Louis Gold—544

Cube texture in body centered magnetic alloys. G. Wiener, P. A. Albert, R. H. Trapp, and M. F. Littmann—366

Curie-point writing on magnetic films. Ludwig Mayer—1003(L)

Design of optimum inductors using magnetically hard ferrites in combination with magnetically soft materials. J. T. Ludwig—497

Development of preferred orientations in silicon iron. J. R. Brown—359

Domain observations on iron whiskers. R. W. DeBlois and C. D. Graham, Jr.—528

Domain observations on iron whiskers. R. W. DeBlois and C. D. Graham, Jr.—931.

Domain wall motion in metals. R. W. DeBlois—459

Domain-wall structure in permalloy films. E. E. Huber, Jr., D. O. Smith, and J. B. Goodenough—294

Effect of cation vacancies on the magnetic annealing of cobalt-substitute magnetite. L. R. Bickford, Jr., J. M. Brownlow, and R. F. Penoyer—441

Effect of cobalt on the relaxation frequency of nickel-zinc ferrite. F. J. Schnettler and F. R. Monforte—477

Effect of elastic bending on magnetic properties of oriented silicon iron. R. W. Cole—370

Effect of hydrostatic pressure and temperature on the magnetic properties of a nickel-zinc ferrite. C. Q. Adams and C. M. Davis, Jr.—372

Effect of sample thickness on the field annealing of 6.5% Si-Fe. P. A. Albert—351

Effect of thermal history on the antiferromagnetic transition in zinc ferrite. D. N. Grimes and Edgar F. Westrum, Jr.—384

Effects of composition and processing variables on the magnetic properties of the 50% nickel-iron alloy. M. J. Savitski—353

Effects of heat treatment of thin ferromagnetic films at intermediate temperatures. E. N. Mitchell—286

Effects of magnetic fields upon anisotropic iron crystals. John H. L. Watson, Anthony Arrott, and Michael W. Freeman—306

Exchange anisotropy in the iron-iron oxide system. W. H. Meiklejohn—454

Factors limiting a magnetic suspension system. J. B. Breazeale, C. G. McIlwraith, and E. N. Dacus—414

Flux reversal in thin films of 82% Ni, 18% Fe. C. D. Olson and A. V. Pohm—274

Further development of the vibrating-coil magnetometer. K. Dwight, N. Menyuk, and D. Smith—491

Further magnetic and x-ray diffraction studies on iron-rich iron aluminum alloys. A. Taylor and R. M. Jones—522

Further observations on reversible rotation in magnetic films. Richard M. Sanders—1003(L)

Growth of MnBi crystals and evidence for subgrains from domain patterns. W. C. Ellis, H. J. Williams, and R. C. Sherwood—534

Improved torque magnetometer. W. S. Byrnes and R. G. Crawford—493

Ionic valences in manganese-iron spinels. Andrew H. Eschenfelder—378

Loss of exchange coupling in the surface layers of ferromagnetic particles. F. E. Luborsky—309

Low residual induction in high-aluminum iron alloys. D. Pavlovic and K. Foster—368

Magnetic anisotropy induced by magnetic annealing and by cold working of Ni_3Fe crystal. Sōshin Chikazumi—346

New magnetic core loss comparator. R. E. Tompkins, L. H. Stauffer, and A. Kaplan—502

Magnetic determination of shape distribution of single domain powders. Clark E. Johnson, Jr., and William Fuller Brown, Jr.—313

Magnetic domain patterns on iron whiskers. R. V. Coleman and G. G. Scott—526

Magnetic domains in Fe_3O_4. H. J. Williams, R. C. Sherwood, and J. P. Remeika—1772

Magnetic fluctuations in molybdenum permalloy. James J. Brophy—483

Magnetic germanates isostructural with garnet. Arthur Tauber, Ephraim Banks, and Horst H. Kedesdy—385

Magnetic losses at low temperatures. E. H. Brown and J. R. Brennand, Jr.

Magnetic measurements on some precipitating systems. A. E. Berkowitz and P. J. Flanders—314

Magnetic moments and apparent molecular fields in some rare earth metals and compounds. Warren E. Henry—524

Magnetic properties of cube textured silicon-iron magnetic sheet. J. L. Walter, W. R. Hibbard, H. C. Fiedler, H. E. Grenoble, R. H. Pry, and P. G. Frischmann—363

Magnetic properties of dilute magnetic alloys and of the rare earths. G. W. Pratt, Jr.—520

Magnetic susceptibility of neutron irradiated quartz. D. K. Stevens, W. J. Sturm, and R. H. Silsbee—66

Magnetization processes in heat-treated single crystal cobalt ferrite. S. Foner and J. O. Artman—443

Magnetization reversal by rotation. P. R. Gillette and K. Oshima—529

Magnetocrystalline anisotropy of Mg-Fe ferrites: temperature dependence, ionic distribution effects, and the crystalline field model. V. J. Folen and G. T. Rado—438

Magnetometallurgy—applications and techniques. Anthony Arrott—508

New method for making magnetic fields visible. Lawrence Suchow—223(L)

Method for measuring saturation magnetization in ring samples. C. D. Graham—68

Method for measuring saturation magnetization in ring samples. C. D. Graham, Jr.—411

Microuniformity of permanent magnets. L. I. Mendelsohn—407

Model for nonlinear flux reversals of square-loop polycrystalline magnetic cores. M. K. Haynes—472

A modified rotational model of flux reversal. E. M. Gyorgy—1709

Motion pictures of magnetic writing on thin films on MnBi. H. J. Williams and R. C. Sherwood—296

Nondestructive memory employing a domain oriented steel wire. U. F. Gianola—849

Observations of dislocations in iron whiskers. R. V. Coleman—1487

Orientation study of ultra-thin molybdenum permalloy tape. P. K. Koh—356

Orientation study of ultra-thin molybdenum permalloy tape. P. K. Kohn—636

Magnetism (*continued*)
Origin and use of instabilities in ferromagnetic resonance. H. Suhl—416
Origin of magnetic anisotropy in $Co_xFe_{3-x}O_4$. J. C. Slonczewski—448
Paramagnetic Faraday effect. Jeanne Soutif-Guicherd—256
Performance of permanent magnets at elevated temperatures. W. H. Roberts—405
Phase analysis of Alnico V based on temperature effects. R. K. Tenzer and K. J. Kronenberg—302
Physical and magnetic properties of elongated single-domain iron and iron-cobalt permanent magnets. R. C. Lever, E. J. Yamartino, and R. B. Falk—304
Precipitation and magnetic annealing in a copper-cobalt alloy. J. J. Becker—317
Preparation and properties of crystal-oriented ferroxplana samples. A. L. Stuijts and H. P. J. Wijn—468
Pyromagnetic effect: a method for determining curie points. A. G. Chynoweth—563
Recent advances in the design of high-field dc solenoid magnets. Henry H. Kolm—489
Recrystallization of MnBi induced by a magnetic field. O. L. Boothby, D. H. Wenny, and E. E. Thomas—353
Relation between colloid pattern and permanent magnet precipitate during magnetization reversal in Alnico V. K. J. Kronenberg and R. K. Tenzer—299
Relation between crystallite orientation and magnetic properties of elongated single-domain iron particles. F. E. Luborsky, E. F. Fullam, and D. S. Hallgren—989
Relations between different modes of acquisition of the remanent magnetization of ferromagnetic particles. E. P. Wohlfarth—595(L)
Relationship between single crystal and effective polycrystalline anisotropy constants in ferrites. C. J. Kriessman, S. E. Harrison, and H. S. Belson—452
Reversible rotation in magnetic films. Richard M. Sanders and Thomas D. Rossing—288
Rigorous approach to the theory of ferromagnetic microstructure. William Fuller Brown—470
Rotational model of flux reversal in square loop soft ferromagnets. E. M. Gyorgy—283
(110) [001] secondary recrystallization texture in three percent silicon-iron. H. C. Fiedler—361
Shape distribution of magnetic powders. Clark E. Johnson, Jr. and William Fuller Brown, Jr.—1699
Size dependence of the wall characteristics in a two-domain iron particle. Henri Amar—542
Skullcap method for magnetizing bowl-shaped magnetron magnets. Francis X. MacDonough—506
Some aspects of tempering 3¼% silicon steel as followed by time decay of permeability. E. S. Anolick and Joseph Singer—412
Some ferrimagnetic properties of the system $Li_xNi_{1-x}O$. J. B. Goodenough, D. G. Wickham, and W. J. Croft—382
Some magnetic and crystallographic properties of the system $LaMn_{1-x}Ni_xO_{3+\lambda}$. A. Wold, R. J. Arnott, and J. B. Goodenough—387
Some properties of quenched magnesium magnetism ferrites. D. J. Epstein and B. Frackiewicz—376
Spin-lattice relaxation time in yttrium iron garnet. R. T. Farrar—425
Spontaneous magnetization of some garnet ferrites and the aluminum substituted garnet ferrites. R. Pauthenet—253
Static and dynamic behavior of thin permalloy films. D. O. Smith—264
Steady-state and pulse measurement techniques for thin magnetic films in the vhf-uhf range. D. O. Smith and G. P. Weiss—290
Substitution for iron in ferrimagnetic yttrium-iron garnet. M. A. Gilleo and S. Geller—380
Suggestion concerning the role of wave-function symmetry in transition metals and their alloys. John B. Goodenough—513
Surface energy of a 90° domain wall in iron. C. D. Graham, Jr.—1451
Temperature dependence of ferromagnetic anisotropy. W. J. Carr, Jr.—436
Temperature dependence of magnetic properties of silicon-iron. C. W. Chen—1337
On the theory of double Bloch walls in thin films. Jan Kaczr—569
Thin film magnetization reversal by coherent rotation. P. R. Gillette and K. Oshima—1465
Time decrease of permeability in iron. G. W. Rathenau—239
Transitions from ferromagnetism to antiferromagnetism in iron aluminum alloys. H. Sato and A. Arrott—515
Transverse flux change in soft ferromagnetics. Floyd B. Humphrey—284
Understanding and predicting permanent magnet performance by electrical analog methods. R. J. Parker—409
Uniaxial magnetic anisotropy induced in Fe-Ni alloys by magnetic anneal. Eric T. Ferguson—252
Unusual magnetic behavior of disordered Ni_3Mn. J. S. Kouvel, C. D. Graham, Jr., and J. J. Becker—518

Magnetostriction
Method for measuring magnetostriction corrected for initial domain distribution and its application to nickel and iron. H. E. Stauss—182
Magnetostriction and elastic properties of ferromagnetic substances at high magnetic fields. Hiroshi Sato—456
Magnetostriction of low density cobalt rondel. H. E. Stauss—1690
Theory of magnetostriction and g factor in ferrites. Noburo Tsuya—449

Mass Spectrometry
Mass determination of ions detected by Bennett ion rf mass spectrometer. Charles Y. Johnson—1134(E)
Mass spectrometer measurements of the diffusion coefficient of hydrogen in steel in the temperature range of 25°-90°C. Robert C. Frank, Don E. Swets, and David L. Fry—892
Thermionic ions from hydrogen-palladium. C. H. Bachman and P. A. Silberg—1266(L)

Mathematics
Analytical representation of angular distribution data. S. C. Snowdon, L. Eisenbud, and J. F. Marshall—950
Galvanomagnetic coefficients for arbitrary geometry. R. M. Broudy—853
Higher approximation to relaxation spectra from dynamic measurements. Hiroshi Fujita—943
Orthogonality properties for modes in passive and active uniform wave guides. A. D. Bresler, G. H. Joshi, and N. Marcuvitz—794
Resolution of doublet lines in spectra by a Fourier series technique. B. F. Canty and A. D. Franklin—870(L)
Statistics and time dependence of mechanical breakdown in fibers. Bernard D. Coleman—968

Metallurgy
(110) [001] component prior to secondary recrystallization in three percent silicon iron. C. G. Dunn—1608
Correlation of thermal etch pits with dislocations in silver. J. P. Hirth and L. Vassamillet—595(L)
Examination of the validity of the critical resolved twinning stress hypothesis. A. R. Rosenfield—227(L)
Internal friction in aluminum at low temperatures. A. J. Filmer, G. J. Hutton, and T. S. Hutchison—146
Investigation of low-temperature internal friction. Hollis L. Caswell—1210

Magnetometallurgy—applications and techniques. Anthony Arrott—508
Measurement of ternary distribution coefficients in silicon. David Navon—579
Note on paper "on creep and relaxation." I. L. Hopkins and R. W. Hamming—742(L)
Polygonization of copper. F. W. Young—760
Preferential volatilization of cations from ferrites during sintering. J. M. Brownlow—373
Recovery of electrical resistivity of Cu, Au, and Ni following cold work at 4°K. C. J. Meechan and A. Sosin—738(L)
Revised calculation of deformation twinning systems. A. R. Rosenfield—1771(L)
Shape changes of internal surfaces in extrusion. W. B Nowak and E. J. Rapperport—1382(L)
Surface tension of titanium, zirconium, and hafnium. A. W. Peterson, H. Kedesdy, P. H. Keck, and E. Schwarz—213
Structural effects of the diffusionless phase transformations in Au-Cd alloys. Howard K. Birnbaum—1773(L)
Thermally precipitated phases and their distribution in an aluminum-silicon-cadmium alloy. R. E. Marburger and A. W. Schluchter—184
Thermionic ions from hydrogen-palladium. C. H. Bachman and P. A. Silber—1266(L)
X-ray study of cold work in molybdenum. J. Despujols and B. E. Warren—195

Noise

Beam noise in crossed electric and magnetic fields. R. P. Little, H. M. Ruppel, and S. T. Smith—1376(L)
Experiment showing the influence of surfaces on $1/f$ noise in germanium. James J. Brophy—1377(L)
Generation recombination noise in intrinsic and near-intrinsic germanium crystals. J. E. Hill and K. M. vanVliet—177
Minimum noise figure of a parametric amplifier. H. Heffner and G. Wade—1262(L)
New mechanism for the generation of flicker noise. F. Fischer and I. P. Valkó—1772(L)
Noise and electron temperatures of some cold cathode argon discharges. E. W. Collings—1215
Noise in oxide cathode coatings. H. J. Hannam and A. van der Ziel—1702
Zeros of gaussian noise. Gerald M. White—722

Nuclear Physics

Birefringence in neutron-irradiated boron glass. C. Mylonas, R. Truell, and P. W. Levy—864(L)
Fast neutron attenuation in graphite. V. P. Duggal and S. M. Puri—675
Gamma-radiation absorption coefficients of air in the energy range 0.01 to 100 mev. J. W. Allison—1175
Heavy moderator approximations in neutron transport theory. Harvey Amster—623
Neutron generation from straight pinches. R. E. Dunway and J. A. Philips—1137
Neutron multiplication in small spheres of fissionable material. P. J. Bendt and R. E. Peterson—1271
Neutron penetration in infinite media; calculation by semiasymptotic methods. Samuel S. Holland, Jr.—827
Neutron production at high energies. Walter E. Crandall and George P. Millburn—698
Radiation induced noise in p-n junctions. W. H. Fonger, J. J. Loferski, and P. Rappaport—588
Thermal neutron absorption cross section of xenon-124. J. M. Tobin and J. H. Sako—1373(L)

Nuclear Reactor

Optical Properties

Birefringence changes during retraction of oriented polystyrene monofilaments. III. Correlation with internal stress changes. J. F. Rudd and R. D. Andrews—1421
Birefringence in neutron-irradiated boron glass. C. Mylonas, R. Truell, and P. W. Levy—864(L)
Critical study of the optical and mechanical properties of glass. Sydney Bateson—13
Crystal growth mechanism in cadmium sulfide crystals. D. C. Reynolds and L. C. Greene—559
Diffraction by a perfectly absorbing thin screen. C. C. Derwin—921
Diffraction patterns at the plane of a slit in a reflecting screen. R. K. Hadlock—918
Electrode potential of germanium in aqueous solutions and the effect of illumination. Walter W. Harvey and Harry C. Gatos—1267(L)
Excitation of short infrared pulses with high repetition rate by electron bombardment of cuprous oxide. Rudolf Frerichs and Frank Weichman—710
Grain boundary photodetector. W. W. Lindemann and R. K. Mueller—1770(L)
Indium antimonide infrared filter. John M. Powell and S. W. Kurnick—1129(L)
Infrared continuum radiation from high-temperature air. T. Wentink, Jr., W. Planet, P. Hammerling, and B. Kivel—742(L)
Infrared spectra of high polymers. VIII. Polyvinyl nitrate. S. Krimm and C. Y. Liang—1407
Light diffracting striations in silicon. R. L. Hopkins—1378(L)
Material fringe value sign reversal in paraplex and castolite. Herbert Becker—1771(L)
Maximum performance of high-resistivity photoconductors. R. W. Redington—189
Measurement of the reflectance and emissivity of graphite at arc temperature with a carbon arc image furnace. M. R. Null and W. W. Lozier—1605
n-type and p-type conduction in alkali-antimonide photoemitters. A. H. Sommer—1568
Photoconductive response of single crystal germanium layers prepared by the pyrolytic decomposition of GeI_4. Donald C. Cronemeyer—1730
Production of cadmium sulfide crystals by coevaporation in a vacuum. R. J. Miller and C. H. Bachman—1277
Observation of domains in the ferrimagnetic garnets by transmitted light. J. F. Dillon, Jr.—1286
Optical properties of several ferrimagnetic garnets. J. F. Dillon, Jr.—539
Radiation discrimination with photoconducting crystals. Y. T. Sihvonen and D. R. Boyd—85
Some observations of the effect of radiation on the refractive indices of certain gases. C. M. Crain—1605
Spectral characteristics of the radiation emitted by electrons accelerated in a synchrotron. D. H. Tomboulian and D. E. Bedo—804
Time delay between high-speed pellets and associated luminosity and ionization. P. E. Tucker, R. A. Davidson, and A. S. Partridge—868(L)
Transparent ferromagnetic light modulator using yttrium iron garnet. C. S. Porter, E. G. Spencer, and R. C. LeCraw—495
Use of an electro-optical method to determine detonation temperatures in high explosives. F. C. Gibson, M. L. Bowser, C. R. Summers, F. H. Scott, and C. M. Mason—628

Phase Transformations
Cooling time of strong glass fibers. O. L. Anderson—9
Experiments in liquid atomization by air streams. Henry F. Hrubecky—572
Freezing of liquids in porous media with special reference to frost heave in soils. K. A. Jackson and Bruce Chalmers—1178
On the limit of superheat. Hiromu Wakeshima and Kazuo Takada—1126(L)
On the nature and location of bubble nuclei in boiling from surfaces. S. G. Bankoff, A. J. Hajjar, and B. M. McGlothlin—1739
Nucleation and growth in photosensitive glass. R. D. Maurer—1
Some aspects of surface boiling. C. E. Faneuff, E. A. McLean, and V. E. Scherrer—80
Structural effects of the diffusionless phase transformations in Au-Cd alloys. Howard K. Birnbaum—1773(L)
Thermally precipitated phases and their distribution in an aluminum-silicon-cadmium alloy. R. E. Marburger and A. W. Schluchter—184
Transitions from ferromagnetism to antiferromagnetism in iron aluminum alloys. H. Sato and A. Arrott—515

Plastic Deformation
Analyses for diffusion during plastic deformation. J. Simmons and J. E. Dorn—1308
Analysis of diffusion in media undergoing deformation. H. Fara and R. W. Balluffi—1133(L)
Arrangements of dislocations in plastically bent silicon crystals. J. R. Patel—170
Changes in thermoelectric power of silver and gold with cold work at liquid nitrogen temperature. E. W. Kammer—1122(L)
Creation of dislocations in LiF crystals at low stresses. J. J. Gilman and W. G. Johnston—110(L)
Crystallites and twinning in cold-rolled nickel. A. P. Young—1127(L)
Discontinuity in the flow curve of polyethylene. E. B. Bagley, I. M. Cabott, and D. C. West—109(L)
Dislocation model of low temperature creep. J. Weertman —1685
Hardness of neutron-irradiated diamonds. A. C. Damask —1590
Influence of irradiation on creep. Gunther Schoeck—112(L)
Movement of dislocation loops in lithium fluoride. S. Amelinckx and W. Dekeyser—1000(L)
Note on paper "on creep and relaxation." I. L. Hopkins and R. W. Hamming—742(L)
Recovery of electrical resistivity of Cu, Au, and Ni following cold work at 4°K. C. J. Meechan and A. Sosin—738(L)
Revised calculation of deformation twinning systems. A. R. Rosenfield—1771(L)
Shape changes of internal surfaces in extrusion. W. B. Nowak and E. J. Rapperport—1382(L)
Some observations on creep in zinc single crystals. H. P. Stüwe—566
X-ray study of cold work in molybdenum. J. Despujols and B. E. Warren—195

Polymers
Apparatus for the measurement of shear modulus and internal friction between 4.2 and 100°K. K. M. Sinnott—1433
Birefringence changes during retraction of oriented polystyrene monofilaments. III. Correlation with internal stress changes. J. F. Rudd and R. D. Andrews—1421
Dielectric relaxation spectra of lithium borosilicate glasses. L. Heroux—1639
Discontinuity in the flow curve of polyethylene. E. B. Bagley, I. M. Cabott, and D. C. West—109(L)
Dynamic mechanical behavior of irradiated polyethylene. C. W. Deeley, J. A. Sauer, and A. E. Woodward—1415
Dynamic mechanical properties of polyvinyl stearate at audiofrequencies. Edwin R. Fitzgerald—1442
Fracture phenomena and molecular weight in polymethyl methacrylate. Sanford B. Newman and Irvin Wolock—49
Free volume approach to polystyrene melt viscosity. Malcolm L. Williams—1395
High-speed fracture in rubber. Peter Mason—1146
Infrared spectra of high polymers. VIII. Polyvinyl nitrate. S. Krimm and C. Y. Liang—1407
Measurement of the isothermal volume dilation accompanying the unilateral extension of rubber. Fred G. Hewitt and Robert L. Anthony—1411
Mechanical behavior of a polymer at temperatures through the glass transition temperature. J. R. Stevens and D. G. Ivey—1390
Molecular motion in polypropylene, isotactic, and atactic. W. P. Slichter and Elaine R. Mandell—1438
Note on stress rupture in glass. Eugene F. Poncelet—1382(L)
Quantitative method for the determination of fiber texture. B. D. Cullity and August Freda—25
Quantitative method for the determination of fiber texture. B. D. Cullity and August Freda—1134(E)
Segmental motion in polypropylene. J. A. Sauer, R. A. Wall, N. Fuschillo, and A. E. Woodward—1385
Shear rate dependence of the viscosity and elastic compliance of polymer melts—correspondence with a hydrodynamic theory of viscoelastic flow. Richard H. Boyd—953
Stress-strain equation for rubber in tension. W. E. Claxton—1398
Tensile strength of plastics: effects of flaws and chain relaxation. F. Bueche—1231
Theoretical values of the dynamic stretch moduli of fiber-forming polymers. W. James Lyons—1429
Time dependence of mechanical breakdown in bundles of fibers. IV. Infinite ideal bundle under oscillating loads. Bernard D. Coleman and Donald W. Marquardt—1091
Viscoelastic properties of concentrated solutions of polyvinyl alcohol. Shigeharu Onogi, Isao Hamana, and Hidefumi Hirai—1503

Radiation Effects in Solids
Analysis of the effect of nuclear radiation on transistors. Joseph Loferski—35
Dislocations, point-defect clusters, and cavities in neutron irradiated LiF crystals. J. J. Gilman and W. G. Johnston—877
Dynamic mechanical behavior of irradiated polyethylene. C. W. Deeley, J. A. Sauer, and A. E. Woodward—1415
Effect of neutron irradiation on the curie temperature of a variety of ferrites. E. I. Salkovitz, G. C. Bailey, and A. I. Schindler—1747
Effect of proton irradiation upon hydrogen reduction of NiO. M. T. Simnad, R. Smoluchowski and Aija Spilners —1630
Hardness of neutron-irradiated diamonds. A. C. Damask—1590
Influence of irradiation on creep. Gunther Schoeck—112(L)
Low-temperature irradiation on *n*-type germanium. J. W. Cleland and J. H. Crawford, Jr.—149
Low-temperature thermal conductivity in neutron irradiated vitreous silica. Anna Foner Cohen—591

Magnetic susceptibility of neutron irradiated quartz. D. K. Stevens, W. J. Sturm, and R. H. Silsbee—66
Neutron irradiation effects in borosilicate glass and their detection by ultrasonic attenuation and velocity measurements. Rohn Truell, John deKlerk, and Paul W. Levy —225(L)
Radiation discrimination with photoconducting crystals. Y. T. Sihvonen and D. R. Boyd—85
Radiation effects from (n,α) reactions in boron glass and energy of the reacting neutrons. C. Mylonas and R. Truell—1252
Radiation enhanced diffusion in solids. G. J. Dienes and A. C. Damask—1713
Radiation induced noise in p-n junctions. W. H. Fonger, J. J. Loferski, and P. Rappaport—588
Radiation-induced recombination centers in germanium. O. L. Curtis, Jr., J. W. Cleland, and J. H. Crawford, Jr.—1722
Silicon crystal counters. W. D. Davis—231(L)
Some observations of the effect of radiation on the refractive indices of certain gases. C. M. Crain—1605
Study of order in annealed and irradiated alpha brass by lattice parameter measurements. R. Feder, A. S. Nowick, and D. B. Rosenblatt—984
Thermal conductivity of sodium fluorite crystal at low temperatures. Anna Foner Cohen—870(L)

Resonant Cavities

Maser amplifier characteristics for transmission and reflection cavities. Malcolm L. Stitch—782
Maser amplifier characteristics for transmission and reflection cavities. Malcolm L. Stitch—1383(E)
Maser oscillator with one beam through two cavities. Willard H. Wells—714
Measurements of the hall mobility in n-type germanium at 9121 megacycles. Y. Nishina and W. J. Spry—230(L)
Measurement of shunt impedance of a cavity. Kenneth B. Mallory—790
Microwave faraday rotation: design and analysis of a bimodal cavity. A. M. Portis and Dale Teaney—1692

Semiconductor Devices

An analysis of the effect of nuclear radiation on transistors. Joseph Loferski—35
Characteristics of junctions in germanium. N. J. Harrick—764
Crack-free alloyed junctions in silicon using pure aluminum. Theodore C. Taylor—865(L)
Decomposition method for producing p-n junctions in InP. K. Weiser—229(L)
On the delineation of p-n junctions in silicon. P. A. Iles and P. J. Coppen—1514(L)
Electrical contacts to silicon carbide. R. N. Hall—914
Field modulation of liquid induced excess surface currents on germanium p-n junctions. W. T. Eriksen—730
Germanium arsenide as diffusion surface compound. Worden Warning, Douglas T. Pitman, and S. Robert Steele—1002(L)
Germanium diffused minicrystals and their use in transistors. I. A. Lesk and R. E. Coffman—1493
Gold on silicon surfaces. R. O. Carlson—1001(L)
Improved diffusion boundary junctions in silicon due to scratch-free polishing. F. Keywell—871(L)
Lifetime and nickel precipitation in silicon. Walter J. Shattes and H. A. R. Wegener—866(L)
Maximum performance of high-resistivity photoconductors. R. W. Redington—189
Radiation induced noise in p-n junctions. W. H. Fonger, J. J. Loferski, and P. Rappaport—588
Reverse breakdown in In-Ge alloy junctions. D. R. Muss and R. F. Greene—1534
Silicon crystal counters. W. D. Davis—231(L)
Solid-state dissolution of germanium by indium in semiconductor devices. John Roschen and C. G. Thornton—923
Two chemical stains for marking p-n junctions in silicon. Peter J. Whorisky—867(L)

Semiconductors

Analog multiplier based on the Hall effect. Lars Löfgren —158
Arrangements of dislocations in plastically bent silicon crystals. J. R. Patel—170
Calculations on the shape and extent of space charge regions in semiconductor surfaces. G. C. Dousmanis and R. C. Duncan—1627
Decomposition method for producing p-n junctions in InP. K. Weiser—229(L)
Diffusion of gallium in silicon. A. D. Kurtz and C. L. Gravel—1456
Dislocations and selective etch pits in InSb. J. D. Venables and R. M. Broudy—1025
Dislocation etch pits in antimony. J. H. Wernick, J. N. Hobstetter, L. C. Lovell, and D. Dorsi—1013
Distorted layers in silicon produced by grinding and polishing. William C. Dash—228(L)
Effect of dislocations on breakdown in silicon p-n junctions. A. G. Chynoweth and G. L. Pearson—1103
Electrode potential of germanium in aqueous solutions and the effect of illumination. Walter W. Harvey and Harry C. Gatos—1267(L)
Electron mobilities in gallium arsenide. L. R. Weisberg, J. R. Woolston, and M. Glicksman—1514(L)
Etch pitting on single-crystal indium antimonide. R. E. Maringer—1261(L)
Etching of germanium by ion bombardment. G. K. Wehner —217
Evidence of dislocation jogs in deformed silicon. William C. Dash—705
Evidence for vacancy clusters in dislocation-free Ge. A. G. Tweet—1520
Factors determining the oxygen content of liquid silicon at its melting point. W. Kaiser and J. Breslin—1292
Floating crucible technique for growing uniformly doped crystals. W. F. Leverton—1241
Galvanomagnetic coefficients for arbitrary geometry. R. M. Broudy—853(L)
Generation recombination noise in intrinsic and near-intrinsic germanium crystals. J. E. Hill and K. M. van-Vliet—177
Growth of silicon and germanium disks. J. R. O'Conner and W. A. McLaughlin—222(L)
Hillocks, pits and etch rate in germanium crystals. Boris W. Batterman—233(E)
Indium antimonide infrared filter. John M. Powell and S. W. Kurnick—1129(L)
Influence of crystal orientation on the surface behavior in InSb. M. C. Lavine, A. J. Rosenberg, and H. C. Gatos—1131(L)
Interactions between oxygen and acceptor elements in silicon. C. S. Fuller and F. H. Doleiden—1264(L)
Low-temperature irradiation on n-type germanium. J. W. Cleland and J. H. Crawford, Jr.—149
Measurement of the Hall mobility in n-type germanium at 9121 megacycles. Y. Nishina and W. J. Spry—230(L)
Measurement of ternary distribution coefficients in silicon. David Navon—579
Ohmic probe contacts to CdS crystals. Y. T. Sihvonen and D. R. Boyd—1143

Semiconductors (*continued*)
Passivity during the oxidation of silicon at elevated temperatures. Carl Wagner—1295
Preparation and regeneration of clean germanium surfaces. Sumner P. Wolsky—1132(L)
Preventing conductivity fluctuations during growth of a semiconducting crystal. W. G. Pfann, J. N. Hobstetter, and G. S. Indig—1238
Production of dislocations in germanium by thermal shock. R. S. Wagner—1679
Photoconductive response of single crystal germanium layers prepared by the pyrolytic decomposition of GeI_2. Donald C. Cronemeyer—1730
Radiation-induced recombination centers in germanium. O. L. Curtis, Jr., J. W. Cleland, and J. H. Crawford, Jr.—1722
Resistivities and hole mobilities in very heavily doped germanium. F. A. Trumbore and A. A. Tartaglia—1511(L)
Silicon crystals free of dislocations. William C. Dash—736(L)
Simplified theory of one-carrier currents with field-dependent mobilities. Murray A. Lampert—1082
Some effects of environment on fracture stress of germanium. P. Breidt, Jr., J. N. Hobstetter, and W. C. Ellis—226(L)
Some properties of gallium arsenide-germanium mixtures. D. A. Jenny and R. Braunstein—596(L)
Space charge calculations for semiconductors. Ruth Seiwatz and Mino Green—1034
Thermal restoration of oxygenated germanium surfaces. A. J. Rosenberg, P. H. Robinson, and H. C. Gatos—771
Work function and sorption properties of silicon crystals. J. A. Dillon, Jr. and H. E. Farnsworth—1195
Zn_3As_2, a semiconducting intermetallic compound. G. A. Silvey—226(L)

Shock Waves
Electrically driven shock tube. D. E. Bloxsom, Jr.—1128(L)
Explosive induced shock waves. Part II. Oblique shock waves. William E. Drummond—167
Further comments on ionizing shock waves in monatomic gases. William J. Guman—109(L)
Further comments on ionizing shock waves in monatomic gases. William J. Guman—873(E)
On the performance of thin-film gauges in high-temperature shock tube flows. Robert G. Jahn and David Weimer—741(L)
Production of high velocity shocks. Vernal Josephson—30
Pulse generator based on high shock demagnetization of ferromagnetic material. R. W. Kulterman, F. W. Neilson, and W. B. Benedick—500
Time delay between high-speed pellets and associated luminosity and ionization. P. E. Tucker, R. A. Davidson, and A. S. Partridge—868(L)
Use of capacitor discharges to produce high velocity pellets. D. E. Bloxsom, Jr.—1049
Use of an electro-optical method to determine detonation temperatures in high explosives. F. C. Gibson, M. L. Bowser, C. R. Summers, F. H. Scott, and C. M. Mason—628

Sound Waves
Abnormally high detonation pressures in a shock tube. I. Ginsburgh—1381(L)
Adiabatic elastic moduli of single crystal alpha-uranium. E. S. Fisher and H. J. McSkimin—1473
Effect of statically applied stresses on the velocity of propagation of ultrasonic waves. R. H. Bergman and R. A. Shahbender—1736
Elastic constants by the ultrasonic pulse echo method. S. Eros and J. R. Reitz—683
High Q quartz crystals at low temperatures. Donald L. White—856
Modulus of rupture of *zxt* 45 ADP crystals. B. J. Faraday and D. J. G. Gregan—1099
Neutron irradiation effects in borosilicate glass and their detection by ultrasonic attenuation and velocity measurements. Rohn Truell, John deKlerk, and Paul W. Levy—225(L)
Orientation dependence of ultrasonic attenuation in zinc. P. C. Waterman—1190
Temperature dependence of the absorption of ultrasound in a nickel single crystal. Forrest G. West—480
Ultrasonic interferometer for the measurement of the temperature dependence of elastic constants. R. P. Espinola and P. C. Waterman—718
Ultrasonic measurement of polarization switching processes in barium-titanate single crystal. K. Husimi and K. Kataoka—1247

Space Charge
Calculations on the shape and extent of space charge regions in semiconductor surfaces. G. C. Dousmanis and R. C. Duncan—1627
Parametric amplification of space charge waves. A. Ashkin—1646
Solution to the equations of space-charge flow by the method of the separation of variables. P. T. Kirstein and G. S. Kino—1758
Space charge calculations for semiconductors. Ruth Seiwatz and Mino Green—1034
Theoretical surface conductivity changes and space charge in germanium and silicon. V. O. Mowery—1758

Spectra and Spectroscopy
Experimental evaluation of the oxygen microwave absorption as a possible atomic frequency standard. John M. Richardson—137
Mass determination of ions by Bennett ion rf mass spectrometer. Charles Y. Johnson—740(L)
Resolution of doublet lines in spectra by a Fourier series technique. B. F. Canty and A. D. Franklin—870(L)
Spectral characteristics of the radiation emitted by electrons accelerated in a synchrotron. D. H. Tomboulian and D. E. Bedo—804

Surface Properties
Adsorption of activated gases. D. G. Bills and N. P. Carleton—692
Adsorption of oxygen and carbon monoxide on tungsten. R. E. Schlier—1162
Application of the ion bombardment-cleaning method to titanium, germanium, silicon, and nickel as determined by low-energy electron diffraction. H. E. Farnsworth, R. E. Schlier, T. H. George, and R. M. Burger—1150
Contact potential measurements on graphite. Alan B. Fowler—1132(L)
Dislocation etch pit formation in lithium fluoride. J. J. Gilman, W. G. Johnston, and G. W. Sears—747
Dislocation etch techniques for some alkali halide crystals. P. R. Moran—1768(L)
Distorted layers in silicon produced by grinding and polishing. William C. Dash—228(L)
Electrode potential of germanium in aqueous solutions and the effect of illumination. Walter W. Harvey and Harry C. Gatos—1267(L)
Etch pitting on single-crystal indium antimonide. R. E. Maringer—1261(L)
Etching of germanium by ion bombardment. G. K. Wehner—217
Etching studies on photographic grains. J. F. Hamilton, L. E. Brady, and F. A. Hamm—800

Examination of the surface and domain structure in ceramic barium titanate. Victor J. Tennery and Franklin R. Anderson—755
Experiment showing the influence of surfaces on 1/*f* noise in germanium. James J. Brophy—1377(L)
Field modulation of liquid induced excess surface currents on germanium *p-n* junctions. W. T. Eriksen—730
Formation of growth spirals on cuprous oxide grown on copper single crystals. G. Tyler Miller, Jr. and Kenneth R. Lawless—863(L)
Germanium arsenide as diffusion surface compound. Worden Waring, Douglas T. Pitman, and S. Robert Steele—1002(L)
Gold on silicon surfaces. R. O. Carlson—1001(L)
Imperfection dependence of the catalytic decomposition of H_2O_2 on Al_2O_3. R. N. Tucker and P. Gibbs—1374(L)
Improved diffusion boundary junctions in silicon due to scratch-free polishing. F. Keywell—871(L)
Influence of crystal orientation on the surface behavior of InSb. M. C. Lavine, A. J. Rosenberg, and H. C. Gatos—1131(L)
Ion induced reemission of noble gases from a nickel surface. J. H. Carmichael and E. A. Trendelenburgh—1570
Liberation of electrons by fast neutral helium atoms from a tungsten target. H. W. Berry—1219
Loss of exchange coupling in the surface layers of ferromagnetic particles. F. E. Luborsky—309
Measurement of instantaneous absolute barium evaporation rates from dispenser cathodes. W. C. Rutledge, A. Milch, and E. S. Rittner—834
Measurement of the reflectance and emissivity of graphite at arc temperature with a carbon arc image furnace. M. R. Null and W. W. Lozier—1605
Passivity during the oxidation of silicon at elevated temperatures. Carl Wagner—1295
Preparation and regeneration of clean germanium surfaces. Sumner P. Wolsky—1132(L)
On the reflection of electromagnetic waves on a rough surface. M. A. Biot—998(L)
Some aspects of the thermal desorption of a boundary lubricant. E. P. Kingsbury—888
Sputtering of surfaces by positive ion beams of low energy. Richard E. Honig—549
Surface energy of a 90° domain wall in iron. C. D. Graham, Jr.—1451
Surface tension of titanium, zirconium, and hafnium. A. W. Peterson, H. Kedesdy, P. H. Keck, and E. Schwarz—213
Theoretical surface conductivity changes and space charge in germanium and silicon. V. O. Mowery—1753
Theoretical surface tension of Ti, Zr, and Hf. Dan McLachlan, Jr.—1134(L)
Thermal restoration of oxygenated germanium surfaces. A. J. Rosenberg, P. H. Robinson, and H. C. Gatos—771
Two chemical stains for marking *p-n* junctions in silicon. Peter J. Whoriskey—867(L)
Work function and sorption properties of silicon crystals. J. A. Dillon, Jr. and H. E. Farnsworth—1195

Thermal Conductivity and Thermal Conduction

Comparison between the linear and nonlinear steady-state behavior of a heated tube. B. L. McFarland—1682
High-temperature heat conductivity of some metal oxides. John C. Jamieson and A. W. Lawson—1313
Low-temperature thermal conductivity in neutron irradiated vitreous silica. Anna Foner Cohen—591
Thermal conductivity and thermoelectric power of germanium-silicon alloys. M. C. Steele and F. D. Rosi—1517

Thermodynamic Properties

Apparent temperatures of some terrestrial materials and the sun at 4.3-millimeter wavelengths. A. W. Straiton, C. W. Tolbert, and C. O. Britt—776
Comments on the Senftleben method for the determination of the heat conductivity, the specific heat, and the viscosity of gases. Sigurds Arajs and Sam Legvold—1001(L)
Contribution of temperature diffuse scattering to wings on bragg peaks. D. R. Chipman and Arthur Paskin—1608
Electrical properties and thermal expansion of the laves phases, $CaMg_2$ and $MgCu_2$. J. F. Smith and J. R. Orgen—1523
Heat of formation of BaC_2. Michael Hoch—1588
Improved x-ray method for determining cation distribution in ferrites. L. P. Skolnick, S. Kondo, and L. R. Lavine—198
Thermometric study of the frozen products from the nitrogen microwave discharge. B. J. Fontana—1668

Thermoelectricity

Changes in thermoelectric power of silver and gold with cold work at liquid nitrogen temperature. E. W. Kammer—1122(L)
Ettingshausen effect and thermomagnetic cooling. B. J. O'Brien and C. S. Wallace—1010
Measured thermal efficiencies of a diode configuration of a thermoelectron engine. George N. Hatsopoulos and Joseph Kaye—1124(L)
Multiple stage thermoelectric generation of power. T. C. Harman—1471
Peltier heat at the interface between a metal and its melt. J. M. Bardeen and B. S. Chandrasekhar—1372(L)
Special techniques for measurement of thermoelectric properties. T. C. Harman—1373(L)
Thermal conductivity and thermoelectric power of germanium-silicon alloys. M. C. Steele and F. D. Rosi—1517

Thin Films

Comments on a theory of double Bloch walls in thin films. Robert E. Behringer—1380(L)
Crystal growth on cathode sputtered copper films by pairs of double spiral mechanisms analogous to Frank-Read Sources. Erich B. Henschke—1495
Curie-point writing on magnetic films. Ludwig Mayer—1003(L)
Domain-wall structure in permalloy films. E. E. Huber, Jr., D. O. Smith, and J. B. Goodenough—294
Ferromagnetic resonance at uhf in thin films. R. H. Kingston and P. E. Tannenwald—232(L)
Ferromagnetic resonance in ultrathin films. M. H. Seavey, Jr. and P. E. Tannenwald—292
Further observations on reversible rotation in magnetic films. Richard M. Sanders—1003(L)
Motion pictures of magnetic writing on thin films on MnBi. H. J. Williams and R. C. Sherwood—296
On the performance of thin film gauges in high-temperature shock tube flows. Robert G. Jahn and David Weimer—741(L)
Orientation study of ultrathin molybdenum permalloy tape. P. K. Koh—356
Production of cadmium sulfide crystals by coevaporation in a vacuum. R. J. Miller and C. H. Bachman—1277
Reversible rotation in magnetic films. Richard M. Sanders and Thomas D. Rossing—288
Steady-state and pulse measurement techniques for thin magnetic films in the vhf-uhf range. D. O. Smith and G. P. Weiss—290
Thin film magnetization reversal by coherent rotation. P. R. Gillette and K. Oshima—1465

Transmission Lines and Wave Guides
Anisotropic effects in geometrically isotropic lattices. Zohrab A. Kaprielian—1052
Behavior of the Te modes in ferrite loaded rectangular wave guide in the region ferrimagnetic resonance. W. J. Crowe—397
Determination of higher order propagating modes in wave-guide systems. Max P. Forrer and Kiyo Tomiyasu—1040
Propagation of waves in helical wave guides. Chiao-Min Chu—88
Energy distribution in partially ferrite filled wave guides. J. E. Tompkins—399
Experimental evaluation of the oxygen microwave absorption as a possible atomic frequency standard. John M. Richardson—137
Influence of wall losses on pulse propagation in wave guides. Ryszard Gajewski—22
Light diffracting striations in silicon. R. L. Hopkins—1378(L)
Measurment of losses of magnetic materials at high inductions at frequencies up to 100 megacycles. Isidore Bady—393
Measurement of the properties of various ferrites used in magnetically tuned resonant circuits in the 2.5–45 mc/sec region. Pietro P. Lombardini, Richard F. Schwartz, and Richard J. Doviak—395
Microwave frequency conversion studies in magnetized ferrites. E. N. Skomal and M. A. Medina—423
Microwave properties of polycrystalline rare earth garnets. M. H. Sirvetz and J. E. Zneimer—431
Orthogonality properties for modes in passive and active uniform wave guides. A. D. Bresler, G. H. Joshi, and N. Marcuvitz—794
Preparation of polycrystalline ferrimagnetic garnet materials for microwave applications. W. P. Wolf and G. P. Rodrigue—105
Resonant modes of ferromagnetic spheroids. L. R. Walker—318
On the theory of double Bloch walls in thin films. Jan Kaczr—569 ,
Theory of nonreciprocal ferrite phase shifters in dielectric-loaded coaxial line. Kenneth J. Button—998(L)

Vacuum Technique
Gettering of oxygen by a nonoperating ion gauge. B. Johnson Todd—232(L)
Gettering of oxygen by a nonoperating ion gauge. B. Johnson Todd—1134(E)

Vibrations
Internal friction in aluminum at low temperatures. A. J. Filmer, G. J. Hutton, and T. S. Hutchison—146
Shear rate dependence of the viscosity and elastic compliance of polymer melts—correspondence with a hydrodynamic theory of viscoelastic flow. Richard H. Boyd—953

Viscosity and Viscoelasticity
Apparatus for the measurement of shear modulus and internal friction between 4.2 and 100°K. K. M. Sinnott—1433
Chain entanglement and non-Newtonian flow. E. B. Bagley and D. C. West—1511(L)
Comments on the Senftleben method for the determination of the heat conductivity, the specific heat, and the viscosity of gases. Sigurds Arajs and Sam Legvold—1001(L)
Free volume approach to polystyrene melt viscosity. Malcolm L. Williams—1395
Higher approximation to relaxation spectra from dynamic measurements. Hiroshi Fujita—943
Intrinsic bulk viscosity in monatomic and diatomic gases. R. E. Nettleton—204
Segmental motion in polypropylene. J. A. Sauer, R. A. Wall, N. Fuschillo, and A. E. Woodward—1385
Viscoelastic properties of concentrated solutions of polyvinyl alcohol. Shigeharu Onogi, Isao Hamana, and Hidefumi Hirai—1503

X-rays and X-ray Diffraction
Antiferromagnetic structures of MnS_2, $MnSe_2$, and $MnTe_2$. L. M. Corliss, N. Elliott, and J. M. Hastings—391
Approximate elastic spectrum of β-AuZn from temperature diffuse scattering of x-rays. Milton Schwartz and Leonard Muldawer—1561
Calculation of the transmission factor in x-ray scattering. M. Sawada and C. H. Shaw—1344
Contribution of temperature diffuse scattering to wings on bragg peaks. D. R. Chipman and Arthur Paskin—1608
Crystallographic and magnetic studies of the system $(NiFe_2O_4)_{1-x}$ $(NiMn_2O_4)_x$. Philip K. Baltzer and John G. White—445
Determination of x-ray absorption coefficients of inhomogeneous materials. Sabri Ergun and Victor H. Tiensuu—946
Direct observation of individual dislocations by x-ray diffraction. A. R. Lang—597(L)
Ferrimagnetic resonance in single crystals of rare earth garnet materials. R. V. Jones, G. P. Rodrigue, and W. P. Wolf—434
Further magnetic and x-ray diffraction studies on iron-rich iron aluminum alloys. A. Taylor and R. M. Jones—522
Rapid x-ray determination of a complete pole figure. J. B. Newkirk and L. Bruce—151
Study of order in annealed and irradiated alpha brass by lattice parameter measurements. R. Feder, A. S. Nowick, and D. B. Rosenblatt—984
Temperature dependence of microwave permeabilities for polycrystalline ferrite and garnet materials. J. Nemarich and J. Cacheris—474
Transparency factor for weakly absorbing samples in x-ray diffractometry. Morton Milberg—64
X-ray investigation of perfection in tin whiskers. H. G. Smith and R. E. Rundle—679
X-ray study of cold work in molybdenum. J. Despujols and B. E. Warren—195
X-ray study of faults in body-centered cubic metals. O. J. Guentert and Bert Warren—40